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# NETWORKWORLD

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THE Signature SERIES

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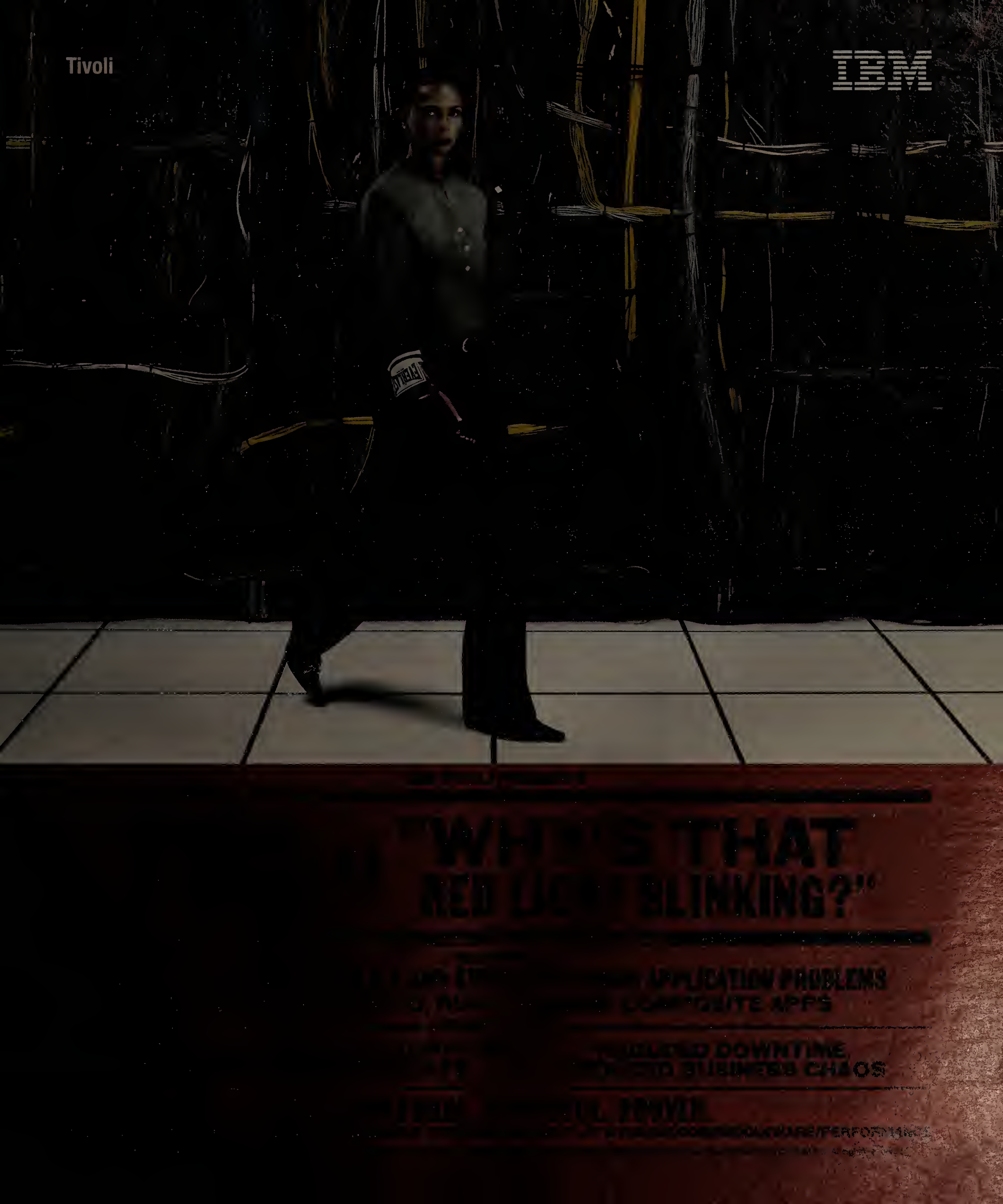
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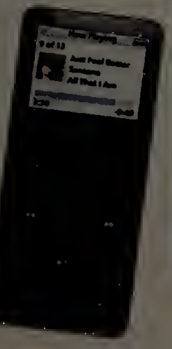

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**DocFinder: 9038**

**VON 2005**
Get caught up on everything that happened at last week's Voice on the Net show with our news roundup page.
**DocFinder: 9039**

**After Katrina**
Sgt. John Metzler of the Ohio National Guard has been in Mississippi since Sept. 1 to help restore communications networks. Follow his experiences in his new *Network World* blog. **DocFinder: 9040**

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# NEWS

## Carriers are key to VoIP prominence

**BY PHIL HOCHMUTH**

**Fall VON 2005**
NEWS ROUNDUP

BOSTON — The true value of convergence won't be realized until self-contained corporate VoIP networks are linked in to the larger IP world through carriers, network professionals said at last week's Fall VON 2005 Conference & Expo.

Some of these professionals say they are interested in tying their converged networks directly in to carrier facilities through IP trunks that use Session Initiation Protocol for transport. That would give businesses more flexibility in provisioning voice/data lines to facilities, while opening the possibilities of more-advanced applications, said those at the show, which attracted more than 300 exhibitors, 7,600 attendees and keynote speakers from companies such as BellSouth, Skype and Vonage.

But such deployments are in their infancy, as large IP trunks in carrier networks are hard to find.

"SIP trunking holds a tremendous value for tying a bunch of small sites together transparently," says Arnold Solomon, IT architect for the Southern Company, which operates utilities Mississippi Power, Gulf Power and Georgia Power, and provides wireless network services in the Southeast.

Most companies, whether they run traditional or IP PBXs, must plug these boxes in to digital public switched telephone network (PSTN) circuits from phone companies to make calls to the outside world. Companies might be able to connect branch offices and even home workers in to a unified VoIP network, but the VoIP stops at the voice carrier, in most cases, as it's converted to digital TDM voice.

The alternative is plugging in to an IP voice circuit instead of a less-flexible digital voice trunk. Solomon says if IP-based trunks connected the Southern Company's hundreds of offices and facilities, the firm could more efficiently manage how it buys and uses voice services, rather than having to purchase a local T-1 digital PSTN trunk to each site.

But Solomon adds that his own company still has far to go in terms of converging its internal networks before linking to a carrier via IP. With a mostly TDM-based infrastructure of Siemens PBXs, Solomon says the Southern Company is just starting to move toward IP handsets and PBXs.

Another user further along in its convergence push also seeks to take the next step with IP trunking.

"Local trunks are something that we really want to get away from," says Todd Goodyear, vice president and manager of voice product development at Merrill Lynch in New York. "Having [voice] T-1s locally at every branch [is inefficient]. We want to move from those to IP trunks."

See VON, page 18

### More on VON

Our reporter's notebook captures sights and sounds from the show. **Page 18.**

Read about VoIP news from MCI and Yahoo. **Page 41.**

See Editor in Chief John Dix's take on VON after many talked about the next phase of VoIP. **Page 60.**

---

## IT pros share their tales of making ITIL work

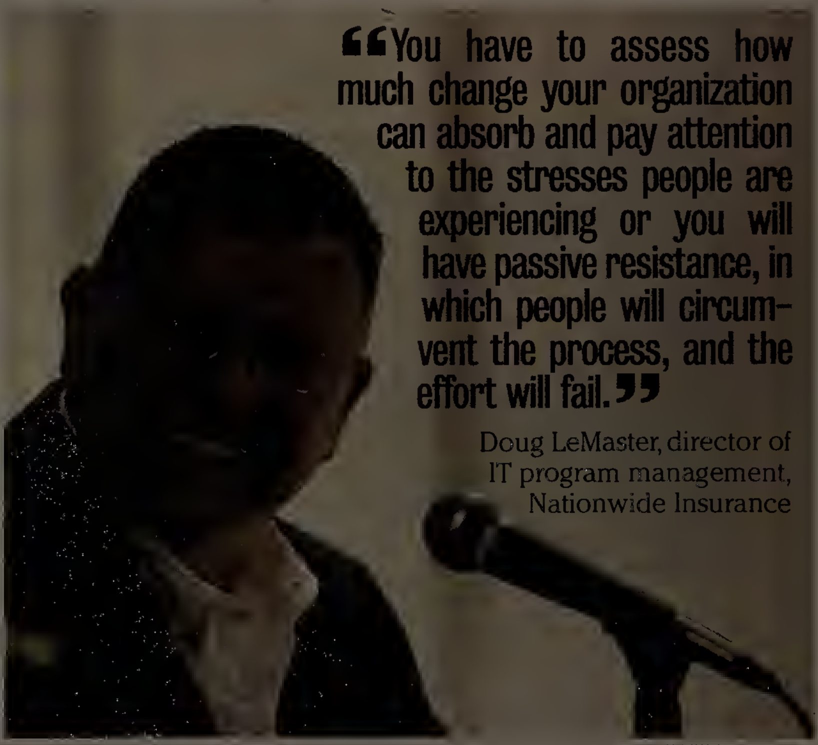
### Enterprise companies tackle the arduous task of implementing organizational change across distributed networks.

**BY DENISE DUBIE**

CHICAGO — Two years into his IT service management implementation at Nationwide Insurance, Doug LeMaster came across a prop skeleton with a sign around its neck declaring, "ITIL is dead!" in the area occupied by the company's network group.

The message — referring to the practices of the Information Technology Infrastructure Library (ITIL) — mocked the efforts LeMaster, director of IT program management, began in 2002 to move some 5,000 IT professionals toward consistent management processes that would ultimately enable the Columbus, Ohio, insurance provider to significantly increase IT service availability. But the image stays with him, as a reminder of how difficult IT organizational change can be if managers don't balance efforts proportionally across people, process and technology.

"The biggest pitfall is not recognizing the people element. You have to keep that triangle balanced. It's easy for the pendulum to swing too heavily on the process and technology sides and overlook the people component," LeMaster says.



"You have to assess how much change your organization can absorb and pay attention to the stresses people are experiencing or you will have passive resistance, in which people will circumvent the process, and the effort will fail."

Doug LeMaster, director of IT program management, Nationwide Insurance

MATTHEW SILSON

Last week LeMaster and numerous other IT managers told their best practices and service management stories to some 2,000 attendees at the fifth annual IT Service Management Forum (ITSMF) USA conference in Chicago. The show featured presentations by companies such as Allstate Insurance, Bank of America, Ernst & Young, General Motors, Liberty Mutual Insurance, State Farm Insurance and U.S. Bank, to name a few. Such household names are a testament to the growing interest in IT best practices among U.S. companies.

The ITSMF USA has doubled its membership from about 1,600 in 2004 to more than 3,000 today, and the organization's local interest groups have grown from 20 sprinkled across the country last year to 31 in 2005. Based on data collected from market research firms, ITSMF officials project that the number of companies adopting best practices in the U.S. could continue to grow from about 30% this year to 75% by 2007.

The ITSMF provides resources for companies to learn more about best practices frameworks such as the ITIL, Control Objectives for Information and Related Technology, the Capability Maturity Model and Six Sigma, all of which provide guidelines on how IT staff members should resolve a customer complaint, configure routers or track changes across a server farm, while also documenting the process, for instance.

"We do not have one location or one manufacturing depot not running at capacity. We are so interconnected, so interdependent that we have to give ourselves a fighting chance when problem solving. IT service management provides that," John Heller, CIO and vice president for the Systems and Processes Division at Caterpillar in Peoria, Ill., told conference attendees during his keynote speech.

"We recently had a challenge with Zotob [a worm targeting Windows 2000-based systems] and for a period of time we lost control of our network. Now how good does that feel?" Heller said. "If you are trying to create a process or pin down who is in charge of the incident in the middle of the crisis, then you are in deep yogurt."

Yet as interest grows, so does the number of reality checks IT managers have experienced when trying to reach best practices nirvana. While details varied among IT managers, the message remained the same. Adopting a best practices framework is hard, time-consuming and challenging to even the best leader trying to compel IT staff to comply with enterprise-wide process change.

Nationwide Insurance throttled back its rollout of ITIL

See Management, page 20

HACKERS, VIRUSES, AND WORMS
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# NEWSbits

## Commuting costs drive up telecommuting

■ With national gas prices hovering close to $3 per gallon, an Alexandria, Va., group has come out with an estimate of how much federal government workers spend to drive to work. The Telework Exchange says federal workers are shelling out $19 million commuting every business day — an increase of $5.7 million per day since April. In a survey of 3,500 government workers, the Telework Exchange calculates federal employees use 31.1 million gallons of gas commuting five days a week. If all federal employees were to telework two days each week, they could reduce gas consumption by 12.4 million gallons per week, the group says. Meanwhile, the government is under the gun to put more teeth into its mandatory telework initiatives. Earlier this month Linda Springer, director of the U.S. Office of Personnel Management, sent a memo to federal agencies' human resources executives encouraging them to more aggressively promote fuel-consuming options such as teleworking and carpooling.

## Credit firms team on encryption

■ The three leading credit-reporting companies last week said they were joining forces to develop new encryption standards they say would better protect the vast amounts of sensitive financial and personal data they electronically transfer each day. The companies — Equifax, Experian and TransUnion — said they would develop standards using encrypted algorithms and 128-bit secret key technologies.

## The butler just didn't do it

■ The search engine Ask Jeeves' dapper, grinning butler will soon be out of a job. Jeeves' pink slip came from Barry Diller, IAC/InterActiveCorp chairman and CEO, who announced the change last week. IAC/InterActiveCorp completed its purchase of Ask Jeeves in July. "By the way, Jeeves will disappear, and we will be called Ask or Ask.com," Diller said. "Not that I don't like that butler." Jeeves, created by British humorist P.G. Wodehouse, was slimmed down and given a tan last year. The use of the Jeeves character as the prominent symbol of the brand blinds people to recent changes and improvements in the search engine, the company said in a statement.

{quote of the week
quote of the week
quote of the week}

"Implementing single sign-on has been like birthing something unnatural."

*Tom Noonan, chairman, CEO and president,*
*Internet Security Systems*

**See story at www.networkworld.com, DocFinder: 9049.**

## WorldCom settlements: $6.1 billion

■ A U.S. district court judge has approved a $6.1 billion settlement to investors who lost money in an accounting fraud at the former WorldCom. Judge Denise Cote of the U.S. District Court for the Southern District of New York approved settlements that parties agreed to earlier this year, including $2 billion to J.P. Morgan Securities and $325 million to Deutsche Bank Securities, according to a spokesman for New York State Comptroller Alan Hevesi, trustee of the New York State Common Retirement Fund and the lead plaintiff in the civil case. The settlement includes payments from former WorldCom directors, as well as former CEO Bernard Ebbers, who was convicted of fraud in March and sentenced to 25 years in prison. Hevesi's office in June estimated Ebbers' assets included in the settlement were worth $25 million to $40 million.

Layer 8

*"Yeah, it's a little heavy, but this new phone has everything! It has video, music, and oh my gosh it matches my hair!"*

**Tom Biggs of Sunnyvale, Calif., walks off with first place this week thanks to his caption above. Check Layer 8 every Monday for the start of a new contest.**
**www.networkworld.com/weblogs/layer8**

## TheGoodTheBadTheUgly

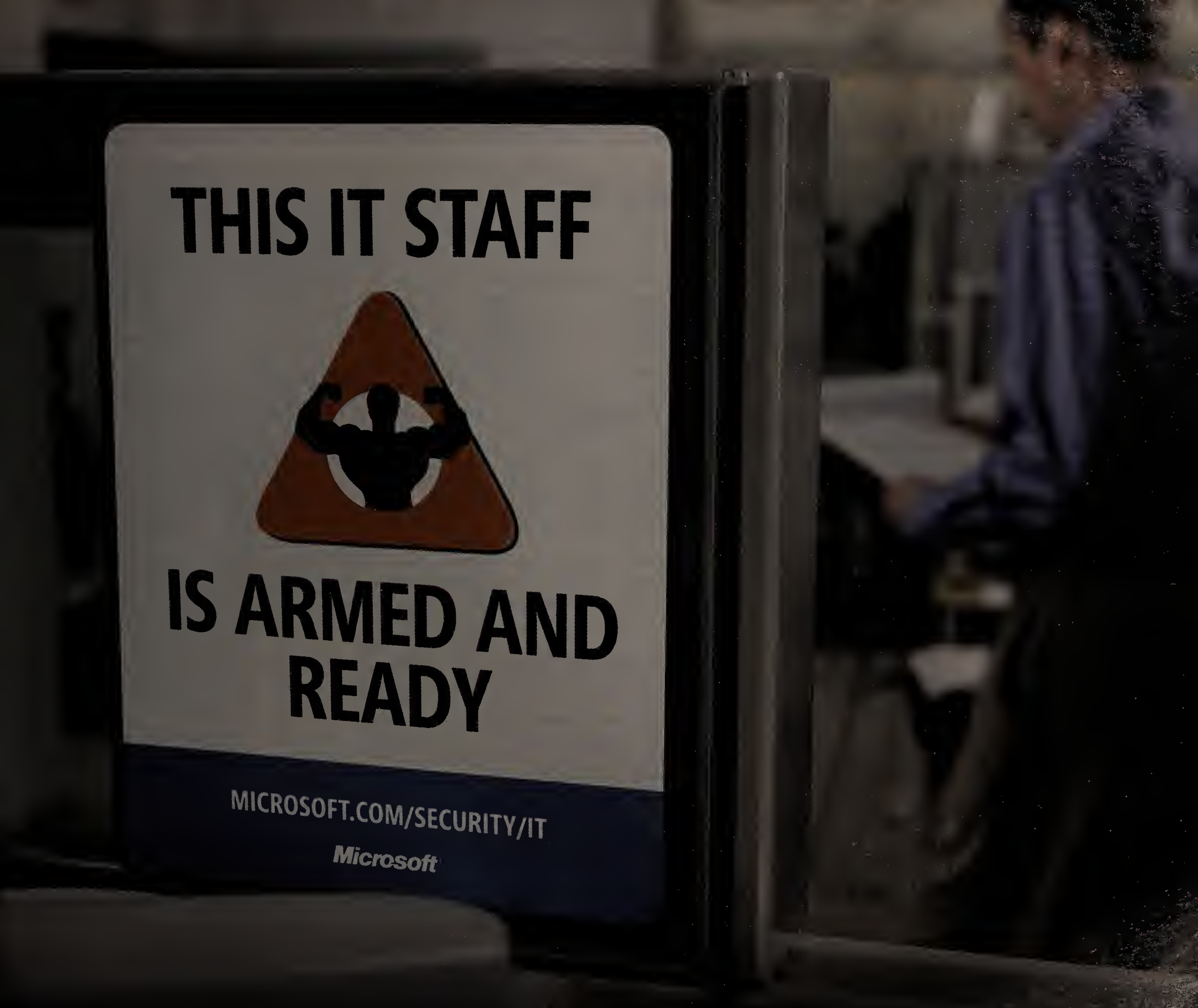
**< Dynamite Gates.** In a bit of inspired movie making, Microsoft wowed attendees at its recent developer's conference with a video co-starring Bill Gates and cult movie favorite Jon Heder, as super-nerd Napoleon Dynamite. At one point Dynamite tells Gates that he looks like his brother. For a peek at the film, visit: www.networkworld.com, DocFinder: 9045.

**Pity the fool.** Tom Tauke, Verizon's executive vice president for public affairs, policy and communications, last week called on the FCC and Congress to create an "updated role" for government in telecom regulation, particularly for rules related to broadband Internet access and services that run over broadband. But he warned against policy makers using "government to shape the market," including through new legislation before Congress. "They want to imagine all of the things that could possibly go wrong and then write rules to prevent them from happening," he said. Government regulators trying to predict the direction technology will take is "a fool's errand," he added.

**Smarter bombs.** At a recent security conference pranksters tracked a Bluetooth device used by Microsoft security honcho Kim Cameron to offer attendees a real-time map of his progress through the convention center. Cameron says it was a light-hearted hack that underlined a more serious point — that kind of technology could be used to build more intelligent bombs. "Nobody has thought through the privacy threats that this involved," he says. "Now I can build a device that explodes when a specific person is in the vicinity."

## NSF, Iowa State eye cybersecurity

■ Iowa State University and the U.S. National Science Foundation will join with private businesses to attack cybersecurity problems in a research center opening this year. The Center for Information Protection, funded mostly through membership fees paid by cybersecurity vendors and users, will focus on short-term cybersecurity issues, possibly including research on methods to comply with federal regulations such as the Sarbanes-Oxley Act, said Doug Jacobson, an Iowa State engineering professor and CTO at Palisade Systems, a network management and security vendor. The center, the first cybersecurity-focused effort in the NSF's Industry/University Cooperative Research Centers Program, will focus on issues identified by members. The program has provided seed money for dozens of research projects, many of which are spun into organizations fully supported by private industry. The center will try to devise technologies that participants can use to fight common cybersecurity problems. Among the center's charter members are Palisade Systems, The Boeing Company and Cargill, Inc.



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Microsoft

# VoIP start-up leans on Fidelity's software

**BY PHIL HOCHMUTH**

A start-up whose VoIP software portfolio comes in part from technology developed within Fidelity Investments' IT department is set to debut this week.

BlueNote Networks says its software, which includes modules for handling everything from Session Initiation Protocol (SIP)-based call control to applications such as voice mail and conferencing, could be used to replace a TDM or IP PBX. But for those disinclined to go with an industry newcomer for their phone system, the company's SessionSuite software can also be used to overlay existing systems.

The software works with standard IP phones from Cisco, Pingtel and others, as well as with SIP-based softphones or communications clients, such as Microsoft Windows Messenger and phones from SIPfoundry. One module provides VoIP network monitoring and configuration, and another offers connectivity with legacy PBX and public switched telephone network connections, although it requires a third-party digital ISDN interface server card. Other modules allow SIP-based traffic to pass through firewalls and gateways. Modules can run separately or together on Red Hat Linux- and Intel-based hardware, the company says.

Fidelity Investments, whose internal development of collaboration software using VoIP and presence is partly behind the SessionSuite technology, is testing the software. Fidelity is looking at how it might use the product to enable its advisers to quickly set up VoIP or videoconferences with clients. The company's venture capital arm also is investing in the 35-person start-up, which is based in Tewksbury, Mass.

"VoIP is happening on the consumer end, with things such as Vonage and Skype," says John Erickson, vice president of network architecture and planning for Fidelity Investments. "But BlueNote is looking at this from an enterprise perspective, and that's what has me excited."

Fidelity's telephony infrastructure is a mix of Centrex services from Verizon and some internally managed VoIP products from various vendors. Erickson sees SessionSuite as a possible way to tie these disparate systems together.

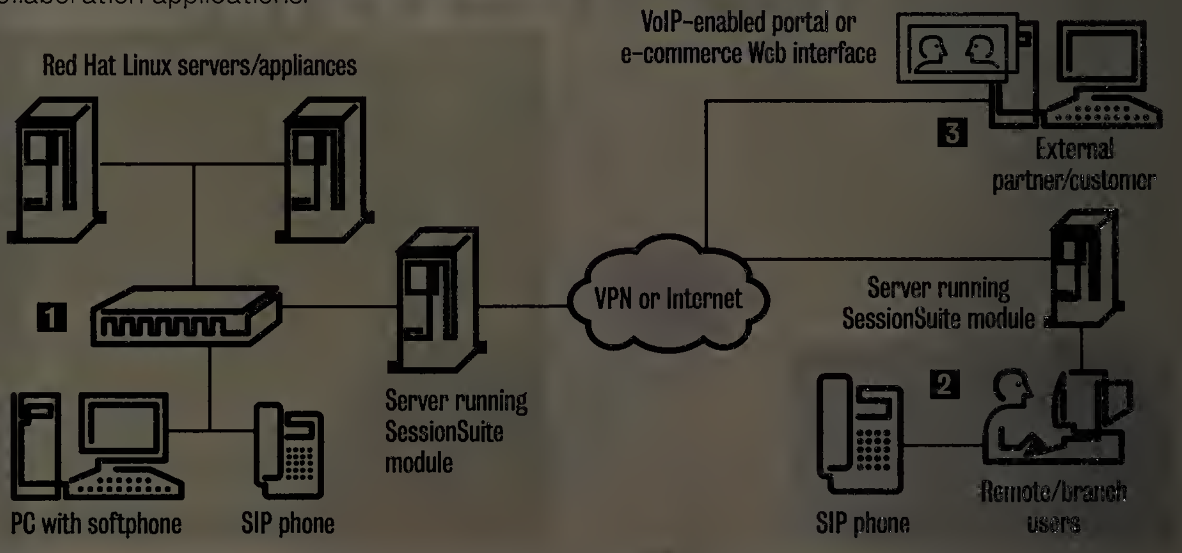
"It is still very early" in the pilot state, Erickson says, but the product "could help us fill a void that legacy providers haven't quite been able to fill."

The SessionSuite modules use SIP for IP communication and are built to run in a service-oriented architecture. An application development server can tie modules in SessionSuite into third-party XML-based applications, such as Web portals, or enterprise applications, such as those from IBM or SAP. BlueNote says examples of this include an ERP application with an instant messaging or voice/videoconferencing capability or a customer portal with a click-to-talk VoIP feature.

SessionSuite is scheduled to be available in the first quarter of next year at $100 per seat. ■

**Modular VoIP**

BlueNote's SessionSuite operates in many areas of a company to control VoIP and other collaboration applications.


VoIP-enabled portal or e-commerce Web interface
Red Hat Linux servers/appliances
3
External partner/customer
1
VPN or Internet
Server running SessionSuite module
2
Server running SessionSuite module
PC with softphone
SIP phone
SIP phone
Remote/branch users

1 SessionSuite servers running in a data center can control calls for SIP-based IP phones and softphone clients.

2 SessionSuite modules, deployed on appliances or small servers at the LAN edge, control the flow of VoIP traffic outside the company.

3 The platform's service-oriented architecture-based technology allows businesses to build VoIP into other applications, such as partner portal or e-commerce sites.

---

# Qwest charges SBC with anti-competitive tactics

**BY JIM DUFFY**

Qwest is charging SBC with anti-competitive practices, including strong-arming carrier business partners not to entertain acquisition offers from "restricted" SBC competitors, such as Qwest.

In a letter to the FCC last week, Qwest complained about the alleged SBC practices and encouraged the FCC to halt them. The charges come three months before the expected closing of SBC's purchase of AT&T, and as FCC Chairman Kevin Martin is looking for the commission to approve the SBC/AT&T and Verizon/MCI mergers by next month.

"In significant commercial transactions with other carriers, SBC appears to be expressly prohibiting those carriers from entering into mergers with certain specified competitors, upon pain of SBC canceling those contracts," wrote Qwest General Counsel Robert Connelly. "The practical result is to confine the ability of such competitors to consolidate and achieve sufficient scale to compete effectively with SBC-AT&T. It is incumbent on this Commission to remedy this situation through adequate conditions on the merger."

Connelly requested the FCC examine contracts between SBC and WilTel, and SBC and Time Warner Telecom. He said the contracts restricted the carriers' abilities to merge with "blacklisted" companies.

**SBC's big buy**

WilTel recently entered into a new Master Services Agreement with SBC that provides for SBC to purchase **$600 million** in services from WilTel through 2007.

"The commission should investigate whether SBC and AT&T are using their massive marketplace clout to make it difficult or impossible for major competitors such as Qwest and others to combine in order to compete more effectively against the merged company," Connelly wrote.

SBC responds, "This filing is a sad, desperate act by one of our competitors who is afraid of having a vigorous competitor in their own backyard. The fact of the matter is, we filed our application for merger approval at the FCC on Feb. 21 and interested parties have had all spring, and all summer, to make their points of view known. Obviously, Qwest has read recent news reports speculating about federal action on the merger and this is an 11th hour act of desperation on their part.

"Like any business that is choosing a supplier with whom it will spend hundreds of millions of dollars, we would like to choose who we want to buy certain services from, but that is hardly remarkable. On the contrary, it is a common and standard commercial practice. In fact, it is so common that Qwest itself is party to contracts that contain similar provisions — for example, Qwest and Sprint PCS agreed to a similar provision in their contract.

"We are confident that the FCC and the [Department of Justice], after an exhaustive and careful review of the facts, will determine that the merger of SBC and AT&T will benefit consumers — and many customers have gone on record in support of the merger for this reason."

Qwest is looking to acquire smaller carriers, or certain assets of smaller carriers, to better compete with the SBC/AT&T and Verizon/MCI unions. Qwest is reportedly sizing up XO Communications, as well as Time Warner Telecom.

Qwest also alleges that SBC is limiting the ability of Qwest and other carriers that access SBC's network to reduce their access costs through grooming and use of unbundled network elements.

"SBC is limiting the ability of customers that are AT&T competitors to leave SBC service and substitute other providers, and to replace less efficient SBC special access with more efficient and less costly SBC configurations," Connelly's letter states.

XO, meanwhile, this week communicated its own concerns to the FCC on what effect the mergers would have on wholesale prices of circuits acquired from the four merging carriers. XO, which says it has "significant" business with SBC, says its actions this week are not coordinated with Qwest's. ■

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# Groups try to chart future of IP nets

**BY JIM DUFFY**

As IP networks take on more business-critical roles, the evolution of these infrastructures becomes cause for great concern, especially with the advent of peer-to-peer applications, Web-based services, and IP-based voice and video.

Several topical sessions will address such concerns this week at the Next Generation Networks conference in Washington, D.C. Pressing issues to be discussed include the future architectural and governmental directions of the Internet, the impact of peer-to-peer applications on business IP networks, and retooling these infrastructures into service-oriented architectures (SOA) supporting Web-based services and XML message-based routing.

### Divergent views

Two standards orgranizations differ on how the next generation 'Net should be built.

| ITU says | IETF says |
|---|---|
| •Derived from the PSTN | • Derived from the Internet |
| •Application-aware | • "Dumb," or application-unaware |
| • QoS definitions and guarantees | • Driven by bandwidth capacity |

Underpinning the discussions about the future direction of the 'Net are two divergent viewpoints: one from the IETF, the other from the International Telecommunications Union (ITU).

"Probably the biggest issue that'll be coming up is, which NGN?" asks Dave Passmore, research director at Burton Group and NGN 2005 conference chairman. "The ITU uses the term Next Generation Networks as the follow-on to the [public switched telephone network], the IP-based phone network that's built on [IP Multimedia Subsystem]. The IETF will tell you that the NGN and IMS are going to collapse under their own weight, that it won't scale, that it violates the layering principle of protocols, that it's doomed to fail."

The two models are radically divergent, says Scott Bradner, consultant with Harvard University's University Information Systems and a *Network World* columnist, who is chairing the panel.

"The current Internet model is the stupid network model, where the network doesn't know what applications you're running and doesn't try to be helpful," he says. "The ITU's model [is] where the network is application-aware and can provide specific extra support for a particular application, such as VoIP. That session will compare what their strengths and weaknesses are, and hopefully out of it we can get some idea of what the future is going to look like."

Bradner says the ITU's model is designed to provide defined and guaranteed QoS, while the Internet is a best-effort model based on bandwidth capacity. He says both are applicable given the network circumstances — if there's plenty of bandwidth, there's no need for QoS controls; if not, there is.

Bradner says the two models will not converge, but will interoperate.

This session and another Bradner-chaired tutorial — on the future of the 'Net — is of particular interest to Aetna, the $20 billion insurance giant.

"A lot of the things we're doing all in one way, shape or form exploits the Internet — Wi-Fi, VoIP, work at home, broadband, as well as across much of our e-commerce with file transfers and [business-to-business] VPNs," says Kevin Sweeney, director of external connectivity and mobile computing for Aetna. "So where that's going, both from a regulatory standpoint, as well as technology, is of great interest."

The future of the 'Net could be shaped in large part by the need to support peer-to-peer applications and Web-based services, which use peer-to-peer protocols. This type of traffic is growing in use and importance in enterprise networks and on the 'Net, especially as companies move to SOAs designed to support peer-to-peer and message-based transmissions.

Peer-to-peer traffic accounts for more than 60% of Internet traffic, according to Passmore, and widespread adoption of peer-to-peer applications, such as Microsoft's integration of Groove Networks into its upcoming Vista operating system, formerly Longhorn, and BitTorrent's file- sharing technology, are expected to further inundate the 'Net.

"Here and now, [these are] bigger [issues] than you could ever imagine," says Frank Dzubeck, president of consultancy Communications Network Architects. "Most people don't understand that Web services are now the way you deliver to the developer, business portion of the company and customer. You now deliver services vs. an application or a transaction. The amount of information that now must be gleaned, monitored and managed, as well as transmitted, increases exponentially."

Another hot topic at the conference, and one that represents a new focus for NGN, is home networking and IPTV.

These sessions will address the kind of network that needs to be built to support video-content delivery, streaming audio and other types of content delivered to the home.

Though focused on home networks, Passmore says the sessions are also relevant to business networks as the sophisticated technology employed to deliver IPTV will "trickle down" to the corporate environment.

"Today's toys often become tomorrow's business tools," he says. ■

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# EMC upgrades Windows data replication software

**BY DENI CONNOR**

In anticipation of data protection announcements this week from Microsoft and Symantec, EMC launched a new version of its replication software for Windows environments.

EMC has enhanced its data replication software, RepliStor, to include the ability to back up and recover not only Microsoft Exchange Data, but also the application itself and add support for Microsoft's Volume Shadow Copy Service, which lets the software take periodic snapshots of data.

At the Storage Decisions expo in New York this week Microsoft and Symantec plan to announce near-continuous data protection products that have been likened to RepliStor (www.networkworld.com, DocFinder: 9044).

### Replication bonanza

A sampling of replication and data protection products for small and midsize companies.

| Product | Supported environmnets | How changes are made, recovered | Pricing |
|---|---|---|---|
| **EMC RepliStor** | Windows | Replicates all file changes; recovers from snapshots. | $1,650 per server |
| **HP OpenView Storage Mirroring** | Windows | Copies all file changes; recovers from snapshots. | $1,590 per server |
| **LiveVault InSync and InControl** | Linux, Solaris, Windows | Reproduces all file changes; recovers from 100 points per day. | Starts at $119 per month depending on # of G bytes. |
| **NSI Software Double-Take** | Windows | Replicates all file changes; recovers from snapshots. | Starts at $1,600 per server |

RepliStor, which EMC acquired when it snapped up Legato Systems in 2003, is a 5-year-old product that continually backs up remote offices and data centers within midsize businesses and recovers data based on snapshots of data that were taken.

EMC's RepliStor saves changes to files on Windows file servers and network-attached storage as they are made. In addition, a number of data snapshots are made on the host RepliStor server. EMC says that this two-stage approach avoids contamination of files. Recovery is available from snapshots taken before the corruption appeared.

The ability to recover Exchange environments is important, analysts say.

"Someone once said that recovering data without the application is like reading without glasses — you've got the book, you've got the words, but you don't know what it means," says William Hurley, analyst for the Data Mobility Group.

"Because RepliStor is host-centric, when it copies data to other machines, it does it inline with what the application would expect, not only in the process of protecting it, but in the process of recovering it," Hurley says. "If you are using a storage-centric means of replication, you are just moving the data about with no means of recovering the application."

Also important to the release is the incorporation of Microsoft's Volume Shadow Copy Service, which provides the mechanism for creating point-in-time copies of data.

Data can be replicated, compressed and encrypted over the IP WAN for fault-tolerance. Using RepliStor, customers also can place data at multiple sites for ready access or consolidate data from servers in multiple sites for centralized backup.

Like Microsoft's System Data Protection Manager (DPM) and Symantec's Panther, EMC's software records every change to a file made on the network and will recover only files from known snapshots.

While it does not have the self-recovery capabilities of Microsoft's DPM or Symantec's Panther, it uses a common interface — Microsoft's Volume Shadow Copy System Provider — to take snapshots of data almost every 15 minutes, if desired.

It is expected to be available in the fourth quarter of this year starting at $1,650 per server protected. ■

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# IT was prepared for Hurricane Rita

**BY DENI CONNOR**

"The information technologies' help desk is currently closed due to weather conditions caused by Hurricane Rita, and the University of Houston Downtown has decided to close the university."

That's the message callers heard late last week when they called Hossein Shahrokhi, executive director of IT at the school. That is, if they even were able to get their calls through to Houston, as the fourth-largest city in the U.S. prepared to lock down for Rita's Category 4 strike.

Shahrokhi is one of 1.3 million residents in Texas who the mayors of Galveston, Corpus Christi and Houston ordered to evacuate last Wednesday morning. With Hurricane Katrina so fresh in mind, these cities aren't taking chances.

Other IT managers in Houston reached by cell phone reported that even if they did want to go to work, it would be next to impossible.

"I'm probably going to stay in Houston, because I didn't get any gas and there's no gas available," says James Taylor, IT manager for SPX Valves and Controls.

He spent last Wednesday and Thursday preparing for Rita.

"We're in the middle of getting everything tightened down," Taylor says. SPX is located just 7 miles inland from the Gulf of Mexico.

"The company itself is shutting down [Friday]. We're doing backups on the server and we push data up to our Charlotte, N.C., location just in case the server gets buried," he says.

SPX doesn't have a hot back-up site, so its staff has been doing tape backups and saving user data to a disk that will be carried offsite. The company's business operations rely primarily on ERP software from J.D. Edwards, which runs on systems in North Carolina and Kansas City, Kan.

"So if everything disappears from here today, people can still do transactions through J.D. Edwards, because all we need is a network line," he says.

Taylor says of all his systems at SPX, his phone systems are most at risk.

"We have an older system with battery backups, but we don't have a hot backup for that either," Taylor says. "We've established 800 lines to our Wisconsin site for customers and employees."

He thought about moving his servers out of the facility but decided against it.

"Right now trying to get out of Houston is impossible — you really risk getting into a wreck and the servers are safer here," Taylor says. "We are going to tie them down, move the low servers to the top of the rack, unplug everything and then cover them up."

Hindsight gained from Tropical Storm Allison in 2001 and a desire to be disaster prepared prompted Greg Arnold, CIO for Big Dog Logistics in Houston, to take another look at his disaster-recovery systems. When Allison caused floodwaters to lap around Big Dog's building, Arnold was backing up to tape.

Now, using LiveVault's service, which shuttles data and applications over IP to disparate locations, Arnold says he is prepared as well as he can be for Rita's wrath.

"Starting this evening [last Wednesday], we are going to begin transferring all our data to some servers in Atlanta," he says.

"Keeping tapes and transferring them around, they get lost and damaged," Arnold says. "The Internet being what it is we can transfer data to another location and resume operations from around the world."

Arnold has set up a business center in North Houston where some key individuals will work out of a home.

"For Internet access, we are going to do the best we can," Arnold says. "For phone systems we're transferring our phones to a phone bank in the North Houston office."

Analysts say that if IT hasn't learned or prepared for Rita yet, it is almost a lost cause.

"If Hurricane Katrina is any indication, the biggest issue is going to be communications — communication systems were basically out of commission," says Stephanie Balaouras, senior analyst for The Yankee Group.

You could be backing up your data regularly, but if you can't communicate with one another and you don't have disaster recovery procedures that you regularly maintained and practiced, having regular backups probably isn't going to help much."

Todd Coury, network manager for law firm Andrews Kurth LLP in Houston, couldn't be reached last week, but he did recently discuss his outfit's IT protection strategy with *Network World*.

He will use MessageOne's OneSwitch technology to replicate his Windows applications and data to Dallas, a city that meteorologists say is sufficiently inland to avoid Rita's punch.

"With OneSwitch, I can log in from home or from anywhere and fail over our key systems to our Dallas office," Coury says. "Before, I would have had to go onsite and fail over our systems." ■

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**After Katrina**

Follow National Guard Sgt. John Metzler's blog as he helps restore communication networks in Mississippi.

**DocFinder: 9046**

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# WAN optimization start-up boosts app performance

**BY PHIL HOCHMUTH**

WAN optimization start-up Silver Peak Systems has rolled out hardware aimed at speeding application and file-transfer performance between remote sites and a central data center.

Silver Peak's technology uses a method of traffic pattern recognition and local data caching to accelerate WAN traffic. The company says this technique can speed performance of all types of WAN traffic, instead of just certain applications or protocols.

The company says its NX line of appliances run software that can accelerate the performance of WAN traffic by caching the bit patterns of WAN traffic — regardless of application protocol or file type — and then caching those patterns in local storage. When the appliance recognizes patterns it already has "memorized" it delivers the bit patterns locally, freeing up WAN pipes for other streams of traffic.

Silver Peak boxes need to be deployed in a corporate data center and at each remote site for the system to work. Boxes at each site communicate with the central device so that each box knows what data is cached, says Craig Stouffer, vice president of marketing for Silver Peak. Because only new data is pushed down, this can reduce WAN bandwidth by as much as 80%, he adds.

Silver Peak's technology differs from WAN TCP/IP compression appliances or wide area file services (WAFS) products, in that it caches binary bit patterns of WAN traffic. This lets the devices recognize and provide local cache access for any type of packet sent over a WAN, whereas TCP/IP acceleration is limited to applications running that protocol, and WAFS gear only accelerates access to certain file types, Stouffer says.

The Silver Peak products will compete with other WAN optimization gear from vendors such as Expand, Packeteer, Peribit (acquired by Juniper in April), FineGround (bought by Cisco in May) and Stratacache.

The devices come in three models: the NX-2500, NX-3500 and NX-7500, which provide 2M, 10M and 155M bit/sec of throughput, respectively. Each box includes four 10/100/1000M bit/sec Ethernet ports. Local caching capabilities range from 250G to 2T bytes of storage. The boxes also provide traffic encryption with Advanced Encryption Standard and IPSec VPN traffic encryption. The NX-2500 and the NX-3500, which are intended for small and midsize branches, cost $10,000 and $18,000, respectively. The NX-7500, which is deployed in corporate data centers, costs $50,000. ■

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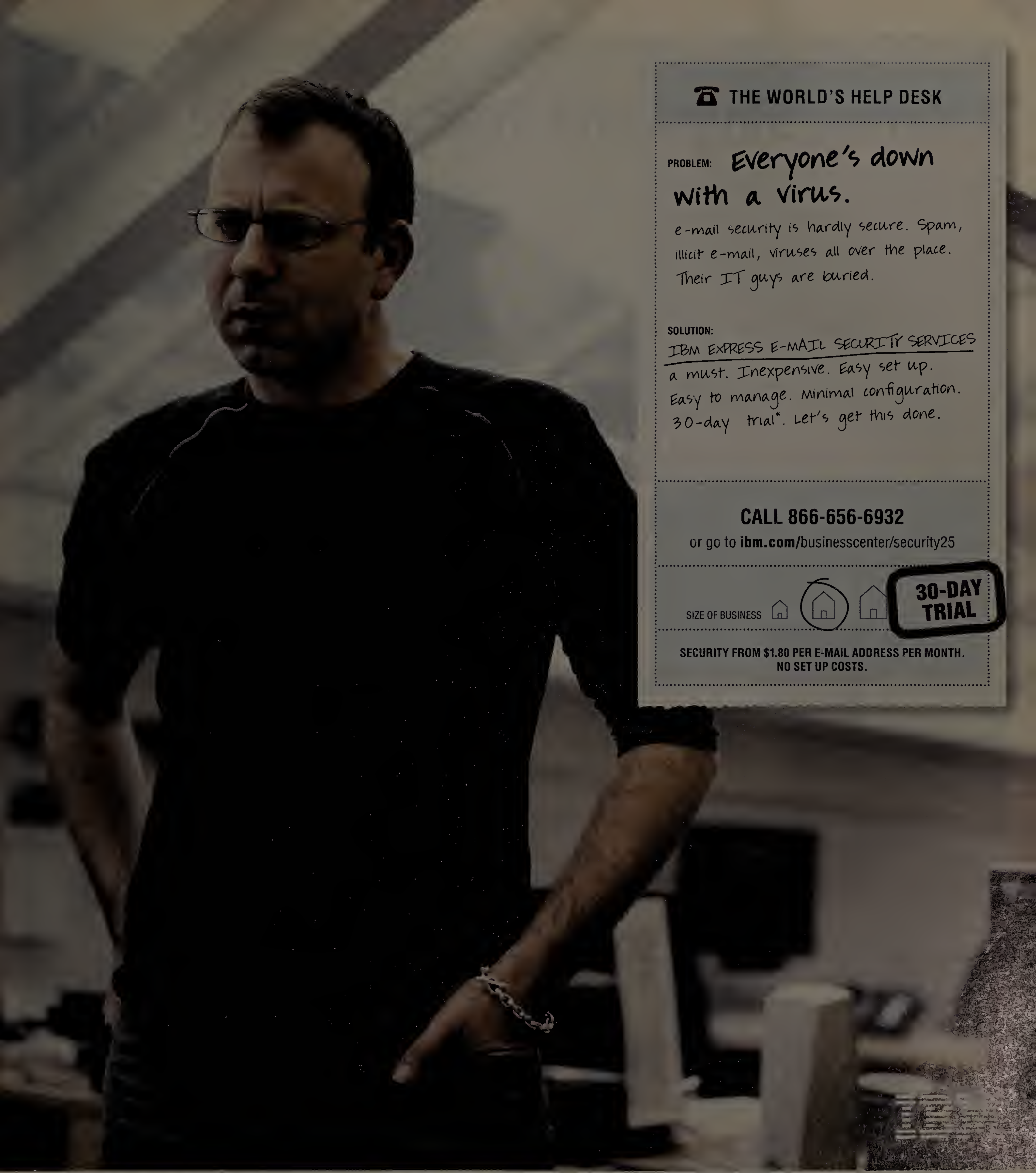

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FALL VON 2005 REPORTERS' NOTEBOOK: HEARD AND SEEN AT THE SHOW

# Katrina, Skype and VoIP dominate show

**BY NETWORK WORLD AND IDG NEWS SERVICE STAFFS**

Fall VON 2005
NEWS ROUNDUP

The storm and its victims continued to be on the minds of many at the event, with several speakers incorporating Katrina-related information into their presentations.

"It would be a disservice to the industry to say that VoIP runs no matter what; it requires the same infrastructure" as traditional telephone service, said Bill Smith, CTO of BellSouth. He was addressing the idea that VoIP service would have withstood Hurricane Katrina better than other telecom services did and that it would have gotten up and running more quickly had it been in widespread use in the affected areas. Three times in the first 5 minutes of the talk he gave last week, Smith referred to that notion as a "disservice."

Separately, telecom industry veteran Tom Evslin, now a consultant, lamented during his presentation that the telecommunications blogosphere wasn't as influential as it thought it was or hoped it would be in the wake of the storm. Bloggers called for the FCC to take immediate action to ease regulations they believed would help restore communications more quickly.

**Consultant Tom Evslin noted how the FCC didn't back down to bloggers' demands.**

"The FCC didn't cower, even though we barked," he said. "Even if the levees aren't going to be safe from a Category 5 storm, the phone networks can be safe from a Category 5 storm, and because they can be, they should be," he added.

### More on Katrina

One VoIP-related project helping Katrina victims is contactlovedones.org. The project involves a free voice mail system set up to help displaced New Orleanians receive messages from concerned friends and family. Dialing 866-78-CONTACT connects callers to an automated prompt, where people can leave voice mail for displaced friends or family, based on the person's New Orleans telephone number. New Orleans residents can retrieve messages by dialing the 866 number and entering their old phone number at the prompt.

The system is based on the open source Asterisk IP PBX system, which includes automated applications for attendant and voice mail management. Five Linux boxes run the Asterisk servers with an Apache Web server and a MySQL database, which creates and organizes the voice mailboxes according to phone numbers. Voice mails are stored as compressed WAV files and can be accessed via the Web.

"This system would have cost well over $50,000 and taken many months to set up," if traditional telephone hardware and software were used, says Yaakov Menken, one of the site's creators and CEO of Capalon Internet Solutions, a Baltimore-based Web hosting company. Instead, VoIP and open source technology allowed the site to go up in weeks.

### Always connected: virtue or vice?

VON was a diverse show, with attendees from all over the world. A group of orthodox Jewish men managed to find a quiet place on the exhibit floor to form a minyan, or prayer group. As the men bowed and prayed, one person in the group appeared to be thumbing a hand-held mobile communications device. One observer noted: "If you're going to make time in your schedule for prayers, just put the Treo away."

### Correction

- The story "Volunteers give voice to evacuees" (Sept. 19, page 14) should have stated The Emergency Operations Center is located at Stennis International Airport.

### Skype: The $2.6 billion partner

Niklas Zennstrom, Skype president and founder, during a talk at the show repeatedly referred to eBay as Skype's "partner" rather than as the company that is buying Skype for $2.6 billion. "We can take advantage of the size of eBay, but we're not going to be integrated into eBay," he said. Zennstrom was supposed to appear via videoconference, but technical difficulties, which show organizers said were purely related to the laptop in use and not to Skype's system, meant that the audience could only hear his comments. This was after an hour delay in connecting with him, during which time two other speakers were moved in the schedule to fill in the gap.

### A real live VoIP customer!

Of the dozens of companies that we talked with in the weeks preceding VON, only one — an outfit called LineSider Communications in Charlestown, Mass. — was able to accommodate our request for an on-site meeting with a corporate network customer (many of the exhibitors sell mainly to carriers, and only a few IT customers were featured on panels). John Rooney, executive vice president of business development for IT service and support company DecisionOne, said his firm swapped out an old TDM-based phone system for a hosted VoIP service when moving its Philadelphia-area headquarters this summer.

He said the traditional voice people at DecisionOne didn't give up running their own PBX without a fight, but it was decided that a hosted service would give the company more flexibility in terms of supporting new applications, such as a hosted help desk. So far, the company has shifted 250 people at its headquarters to the new system (which works with Polycom phones) and is rolling out the service to field personnel. "We wanted to get as much of the network off of our [premises] and onto someone else's," he says. "We didn't want to get stuck with more Big Iron."

**DecisionOne's John Rooney said his company has shifted 250 people to a hosted VoIP service.**

If DecisionOne did it over again, Rooney says the company probably would have done its migration a bit differently. For one, it might have chosen to migrate pockets of employees at headquarters to VoIP initially instead of migrating the whole office. He also said the company could have better articulated its need to support faxing over the new system, because faxes are a key tool in DecisionOne's business. Finally, he said the company could have put more planning into number portability, which took several weeks.

Asked about the biggest surprise with the new system, Rooney didn't hesitate: "Voice quality. It's no different than what you'd have on a regular line." Rooney said DecisionOne will likely start rolling out some new applications to exploit the VoIP system around the start of 2006. But first things first: "We still don't even have our cafeteria," he says.■

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## VON

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Merrill Lynch is deploying IP phones to more than 600 branch offices this year, tying the sites back to centralized Cisco IP PBX clusters at distributed data centers. But remote sites will still require local trunks to make outside calls in some cases. Goodyear says IP trunking would let Merrill Lynch allocate PSTN phone trunks virtually through the company's centralized data centers. This would make management and provisioning easier, because data and on-net calls are already managed centrally.

"This is something we expected to start to have legs last year, but we don't see it taking off, whether it's issues around regulation or just demand in the marketplace," he says.

One expert says while carriers might be dragging their heels about offering IP voice trunks in their networks, such a move will ultimately benefit both customers and service providers.

"In the core of their voice networks, carriers are pretty much IP," says Annabel Dodd, an independent network consultant and author of the forthcoming *The Essential Guide to Telecommunications*, Fourth Edition. "Carriers are starting to move IP to the edge. It's just a matter of time before they do offer that on a large scale, because they don't want to continue to support two or three different types of networks."

For their part, vendors announced services last week at VON that might begin to address some of the needs for large-scale IP trunking and VoIP services. MCI and Sprint, for example, both announced services designed to tie together IP services and IP PBX gear.

Qwest and Microsoft also could help make converged applications more easily deployable. Through a new partnership, Microsoft said last week it is contributing its Solution for Enhanced VoIP services to a suite comprising hosted versions of Microsoft server products, including Exchange Server 2003, Office Live Communications Server 2005 and Windows SharePoint Services, with Sylantro Systems' Application Feature Server. Microsoft and Qwest are working to deploy this suite with Qwest's OneFlex VoIP network services.

*Senior Editor Tim Greene and the IDG News Service contributed to this story.*

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## Management

continued from page 8

processes such as release management this year to help the company mature the already implemented process improvements, which include incident, problem, change, and configuration management.

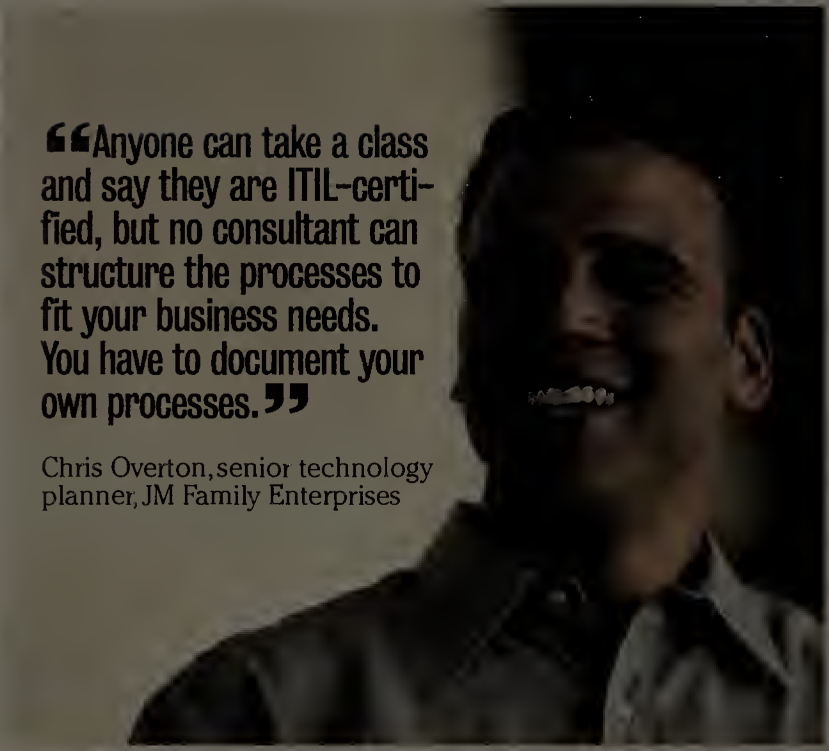
"You have to assess how much change your organization can absorb and pay attention to the stresses people are experiencing or you will have passive resistance, in which people will circumvent the process, and the effort will fail," he says.

One way to get over the personnel pushback is through financial reward. Nationwide incorporated adherence-to-process objectives into its compensation and bonus plans for employees. LeMaster says making compliance not only mandatory but also personally beneficial to employees can help speed the adoption curve.

"You don't want to have to browbeat people into compliance, but by building process compliance into personal performance objectives it does improve the focus," LeMaster says. "As an organization moving from systems management to service management, we've changed our focus from service availability to understanding customer impact."

Bob Paniagua, change control manager at AutoNation in Fort Lauderdale, Fla., says change management processes were adopted at his company, specifically to get in front of auditor requirements in Sarbanes-Oxley regulations. But, he adds, comprehensive upfront work could help reduce the inevitable pushback many IT organizations experience when rolling out massive changes companywide.

"When you encounter pushback, you have to let them speak so you can understand their resistance," he says. "Also, I can't write the change management processes for every IT function. I needed to get the departments to work with me, document for me the processes that would work based on their jobs and incorporate that into the overall framework."



**"Anyone can take a class and say they are ITIL-certified, but no consultant can structure the processes to fit your business needs. You have to document your own processes."**

Chris Overton, senior technology planner, JM Family Enterprises

MATTHEW GILSON

Chris Overton, senior technology planner for JM Family Enterprises (JMFE) in Deerfield Beach, Fla., encourages writing out lengthy internal processes and then whittling them to fit into a common set of guidelines as opposed to depending on external sources for process definition.

"Anyone can take a class and say they are ITIL-certified, but no consultant can structure the processes to fit your business needs," he says. "You have to document your own processes."

While others would argue that ITIL-certification requirements are quite stringent, Overton makes a point. His company worked to roll out four clustered ITIL processes — incident, problem, change and configuration management — at an accelerated pace (about four months). The goal was to establish the service desk as the single point of contact. JMFE supports and provides IT services for automotive dealerships distributed across the southeastern U.S. Following the process upgrades, his team wasn't able to accurately calculate how many service calls the front-line support desk could expect or could handle.

"Hold times went up, no-answer times went up, ticket queues went up and overall calls went up," Overton says.

Rather than ruling out the ITIL guidelines as a loss, he explains that after the increase in calls to the service desk — which he bases on not accounting for the number of times internal customers walked over to an IT staff member or called them directly without going through the service desk — JMFE reconfigured their processes to include additional steps.

For example, the company instituted 10-minute call limits for front-line support to resolve an issue before passing it up to second-tier staff. JMFE also made it mandatory for IT staff to update complaining customers on the status of their tickets when a resolution did not occur within predefined time limits.

"The speed bump we hit was in not having common processes to address these types of issues," Overton says. "We had to get various stakeholders involved that knew the business and knew IT to ensure the processes would work across the entire organization." ■

## Magnum shows off new Advantage

CHICAGO — Magnum Technologies last week upgraded its management software with enhanced discovery and application-mapping capabilities that the company says can help customers better track how IT service performance affects businesses.

Magnum used the fifth annual IT Service Management Forum (ITSMF) USA conference to demonstrate the new features of its Advantage software. Service-level management and Information Technology Infrastructure Library (ITIL)-compliance reporting are a few of the enhancements, the company says. That means Advantage 2.0 could alert customers when IT service performance does not meet pre-defined service-level agreements or the processes being used stray from the guidelines laid out in ITIL.

"We are providing tools to help automate the processes designed by customers using ITIL or other compliance guidelines," says Tim Hadden, Magnum CTO.

Advantage 2.0 is software that installs on a dedicated server and uses polling to collect data from infrastructure elements such as application and Web servers. The software can use existing monitors and uses XML documents to send and receive data from third-party management systems, such as IBM's Tivoli Enterprise Console. The software now can auto-discover IT assets and show the interrelationships among assets and applications, the company says.

Customers create a group of related assets in a wizard-like tool, and Advantage 2.0 can roll that into a dashboard view, from which customers can track application performance problems by the line of business affected or drill down to find the IT cause of the problem.

Industry watchers speculate that a company of Magnum's size will have a hard time competing from BMC Software, Computer Associates, HP and IBM, with which Magnum has a reseller agreement that incorporates Magnum technology into IBM's Tivoli Switch Analyzer product.

"These types of root-cause and correlation capabilities are still pretty incomplete with most vendors, so when you talk about correlating against service models it gets more incomplete," says Stephen Elliot, a senior analyst with IDC. "This is an interesting discovery technology, but there will be user concerns around the size of the company."

Advantage 2.0 is priced starting at around $75,000.

**— Denise Dubie**

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## Buzz

continued from page 112

DVDs in its debut incarnation. Turn that pile of DVDs you never watch into a pile of DVDs you'd like to watch for 99 cents per swap with other members of the service. Less expensive than Netflix, the company claims. As for available inventory, I tossed them a curve by requesting the 1940 Cary Grant classic "His Girl Friday" . . . and the Peerflix membership was at the ready with a half-dozen copies.

Tired of paying for directory assistance? If you can stand a 12-second commercial before getting your number, Jingle Networks will save you that buck or two. Dial 1-800-FREE-411.

Finally, one of the most warmly received products at DemoFall was the one that really had no business being there: the SafeGuard Child Seat from IMMI. While not technically a tech product, plenty of technology went into developing and building a car seat that looks like it could protect a NASCAR driver if not for the fact that those guys weigh more than 65 pounds. It's impressive but pricey at $429 apiece — and as a father of 4-year-old triplets, I found the math unpalatable. But you may want to check it out at www.safeguardseat.com.

*Snap judgments always welcome here. The address is buzz@nww.com.*

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# HP launches LAN core, edge, switches

**BY PHIL HOCHMUTH**

HP this week is expected to launch several Ethernet switch and network access control products targeting businesses looking to deploy advanced security and QoS features at the LAN edge with high-bandwidth pipes in the core.

HP's ProCurve networking group is launching two LAN core switches under its new Interconnect Fabric Switch line, aimed at connecting intelligent switches at the LAN edge with simplified, high-speed pipes at the core, the vendor says. HP also is launching switches for LAN edge connectivity, as well as new software products for controlling and managing how users access a corporate network.

The ProCurve Interconnect Fabric Switch 8100 series includes the 16-slot 8116fl and the eight-slot 8108fl. The boxes are based on switch technology HP acquired last year from carrier Ethernet vendor Riverstone Networks. The switches support single-port 10G and 10-port Gigabit Ethernet modules. Total switching capacity on the 8116fl tops out at 320G bit/sec, while the smaller box supports 160G bit/sec of bandwidth.

HP says the key features on the products don't involve speeds and feeds, as most competitive backbone switches can reach the terabit range in bandwidth. HP says the architecture of the switches differs from competitive boxes in that each connectivity module on the device runs as its own independent packet switch, allowing the box to process packets locally on each blade, instead of passing packets up to a centralized management module for interpreting packet data such as QoS header settings, access control lists and other information beyond IP and media access control addresses.

HP says this makes the switches faster than other boxes that are meant to apply settings to packets in the LAN core instead of quickly reading and passing on packets coming in the edge.

An 8116fl switch is running on the network at the College of Oceanic and Atmospheric Sciences at Oregon State University. The box is in beta now and soon will be moved into the production network, connecting clusters of parallel-processing computers running environmental research applications.

"We really like the distributive design of the operating system," says Chuck Sears, manager of research computing at the Corvallis college. "The localized operating system design allows for very efficient communication between management module and control plane. . . . It's a nice way to load balance using software to multiple CPUs," when running different kinds of traffic types through the switch.

The 8116fl and 8108fl will be available next month and cost $39,000 and $28,000, respectively. Along with the new backbone switches, HP is launching a ProCurve switch for the LAN edge for basic deployments. The ProCurve 2800-8-PWR is an eight 10/100M bit/sec ports with Power over Ethernet support, and a single Gigabit uplink and costs $900.

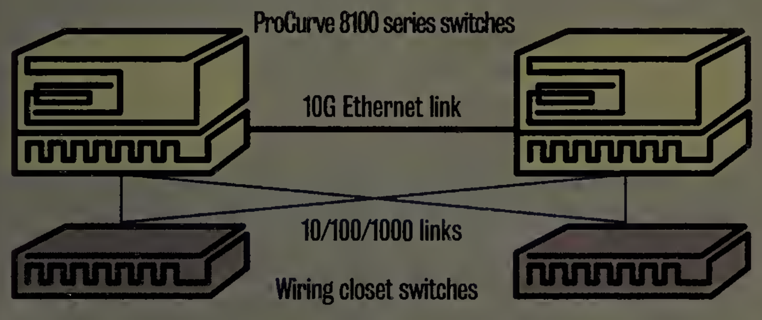
For managing LAN end-user connections, HP has an update to its Identity Driven Manager (IDM) software, announced last year, which lets LAN-switch hardware enforce policies, such as when the network can be accessed, end-user authorization and control of access based on end-user identities. IDM Version 2.0 now allows businesses to lock out end users if PCs or laptops do not meet predetermined requirements for anti-virus and operating system updates or if connecting machines are infected with malware.

HP says its IDM 2.0 product uses Trusted Network Connect architecture, as outlined by the Trusted Computing Group, an organization of about 60 vendors that is developing standards for secure network protocols and technologies. Currently, IDM 2.0 can work with authenticating and client verification and remediation server products from Funk Software, allowing users running Funk authentication infrastructure to integrate with HP ProCurve switches. This technology is similar to Cisco's Network Access Control architecture. IDM 2.0, a $5,500 plug-in module that works with HP's server-based ProCurve Manager Plus switch management software, is expected to be available in December.

For wireless connectivity security, HP also is releasing ProCurve Mobility Manager 1.0, also an add-on to ProCurve Manager plus. This $2,000 plug-in allows users with HP ProCurve wireless LAN endpoints to push down configuration settings, such as network IDs, radio channel settings and access control lists, to wireless LAN hardware from a centralized console. ProCurve Mobility Manager 1.0 also is expected to be available in December. ■

## Simple to the core

The new HP ProCurve 8100 series switches are designed to move packets at high speeds, while relying on wiring closet or other edge devices to apply security or other controls to network traffic.



## Management play: HP snaps up Peregrine, AppIQ

Looking to fill out its management offerings, HP last week said it would pay $425 million to add Peregrine Systems' asset management technology to its software suite.

Asset management technology was notably absent from the company's OpenView portfolio, according to Todd DeLaughter, vice president and general manager of the HP Management Software Organization. "This technology will go toward our IT service management strategy by helping companies link IT resources back to the asset and determine the financial relevance to the company."

Asset management, not to be confused with asset tracking, includes technology to handle hardware procurement and life-cycle management. For instance, information collected by asset management software could help IT managers determine the cost of supporting a desktop over the lifetime of the machine, including software support, hardware maintenance and procurement costs. Asset tracking, capabilities HP acquired in April 2004 with Novadigm, helps companies take an inventory of assets and monitor the software licenses running on the assets.

"The asset management capability will be increasingly important because it can help the IT organization get a real finance-based picture of how they are managing their existing IT operations," says Dennis Gaughan, research director at AMR Research.

HP's DeLaughter says the company can't move on product integration plans until the deal is closed next year, but HP is expected to sell the AssetCenter stand-alone, with further integration to be determined in 2006. Peregrine customers also can forget about Peregrine's planned product road map to integrate AssetCenter with its ServiceCenter product, industry watchers say. HP will be challenged to bring those technologies together, with tools from Novadigm and HP's OpenView Service Desk.

"HP will have to integrate the overlap technology of ServiceCenter and its own Service Desk product, and Novadigm's network discovery is stronger than Peregrine's, so HP will have to address that overlap," says Patricia Adams, principal research analyst at Gartner. "HP got a slam dunk in terms of asset management, but it also has to set a clear product road map to keep the Peregrine installed base."

Turning its attention to managing storage-area networks and storage resources, HP acquired AppIQ last week. The two companies didn't disclose the price, but say in about 45 days AppIQ business will be integrated into the StorageWorks division of HP's technology solutions group.

HP was already an OEM partner for AppIQ. The two companies signed a deal in March that allowed HP to resell AppIQ's StorageAuthority software as HP Storage Essentials.

"The acquisition is a smart move for HP," says Stephanie Balaouras, senior analyst for The Yankee Group. "AppIQ is the only [storage resource management] platform that can compete with EMC's Control-Center and IBM's Tivioli Productivity Center."

AppIQ has 135 employees and about 250 customers, the company says.

**— Denise Dubie**

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**Vortex2005: Setting IT Agenda**

Straight talk from the leaders of AT&T, EMC, HP, Intel, Microsoft and Sun on security and collaboration at the annual gathering.

**DocFinder: 7638**

# Microsoft reorganizes; Allchin to retire in 2006

**BY ELIZABETH MONTALBANO, IDG NEWS SERVICE**

Microsoft's reorganization makes sense for the world's largest software company, which was getting too big and unwieldy under its former structure to continue to be managed efficiently, industry analysts say.

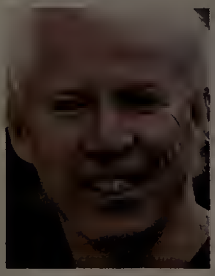
Microsoft has consolidated six divisions into three, each with its own president: the Microsoft Platform Products & Services Division, led by Kevin Johnson and Jim Allchin as co-presidents until Allchin retires at the end of 2006; the Microsoft Business Division, with Jeff Raikes as president; and the Microsoft Entertainment & Devices Division, with Robbie Bach as president.

The new Platform Products & Services group will comprise the current Windows Client, Server and Tools, and MSN online services divisions. The business group will consist of the current Microsoft Information Worker group, including Microsoft Office, and the Business Solutions group, which includes CRM and ERP applications. The new entertainment division will oversee the development of entertainment and digital devices, such as IPTV, Xbox and other consumer-oriented digital products.

The restructuring will enable Microsoft to more efficiently deliver products, combining technologies from divisions that previously had difficulty working together, because they were in separate organizations, says Rob Enderle, principal analyst for Enderle Group.

"The company had become almost unmanageable," he says. "In the past two and a half years, it felt like you just couldn't get anything done. The turf wars became more pronounced."

Enderle cites handheld gaming devices, which are hot in the consumer gaming market, where Xbox is marketed. "Microsoft couldn't build one because you have to bring together a bunch of different groups that don't work together," he says.



Jim Allchin, group vice president of platforms, is set to retire in 2006 after 16 years with the company.

See Allchin's interview with *Network World* Senior Editor John Fontana:
**www.networkworld.com, DocFinder: 9035**

An issue like this should be resolved under the reorganization, because it not only aligns different groups that previously were separate divisions, but also gives people someone to look to for answers — in the form of a division president — if there are problems with collaboration between teams, Enderle says.

The new structure also is logical in that, except for the former MSN Division, businesses are organized according to the customer base for the products and services in each group, says Ted Schadler, a vice president at Forrester Research.

"This organization is a simple one because the alignment here of all the product groups save one is around markets: around people who write checks, the buyers," Schadler says.

The restructuring will give Microsoft CEO Steve Ballmer more time to identify long-term goals for the markets each unit serves, while leaving the coordination of various divisions and specific goal-setting up to their respective presidents, Schadler says.

"It's a much more autonomous business-unit structure," he says.

Schadler does not think the inclusion of MSN into the new Platform Products & Services Division is as logical as the rest of the new structure, but a Microsoft spokesman says it fits with the company's plan to depend less on selling packaged software and provide more services for customers. ■

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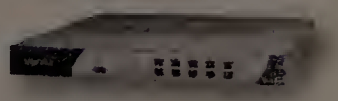
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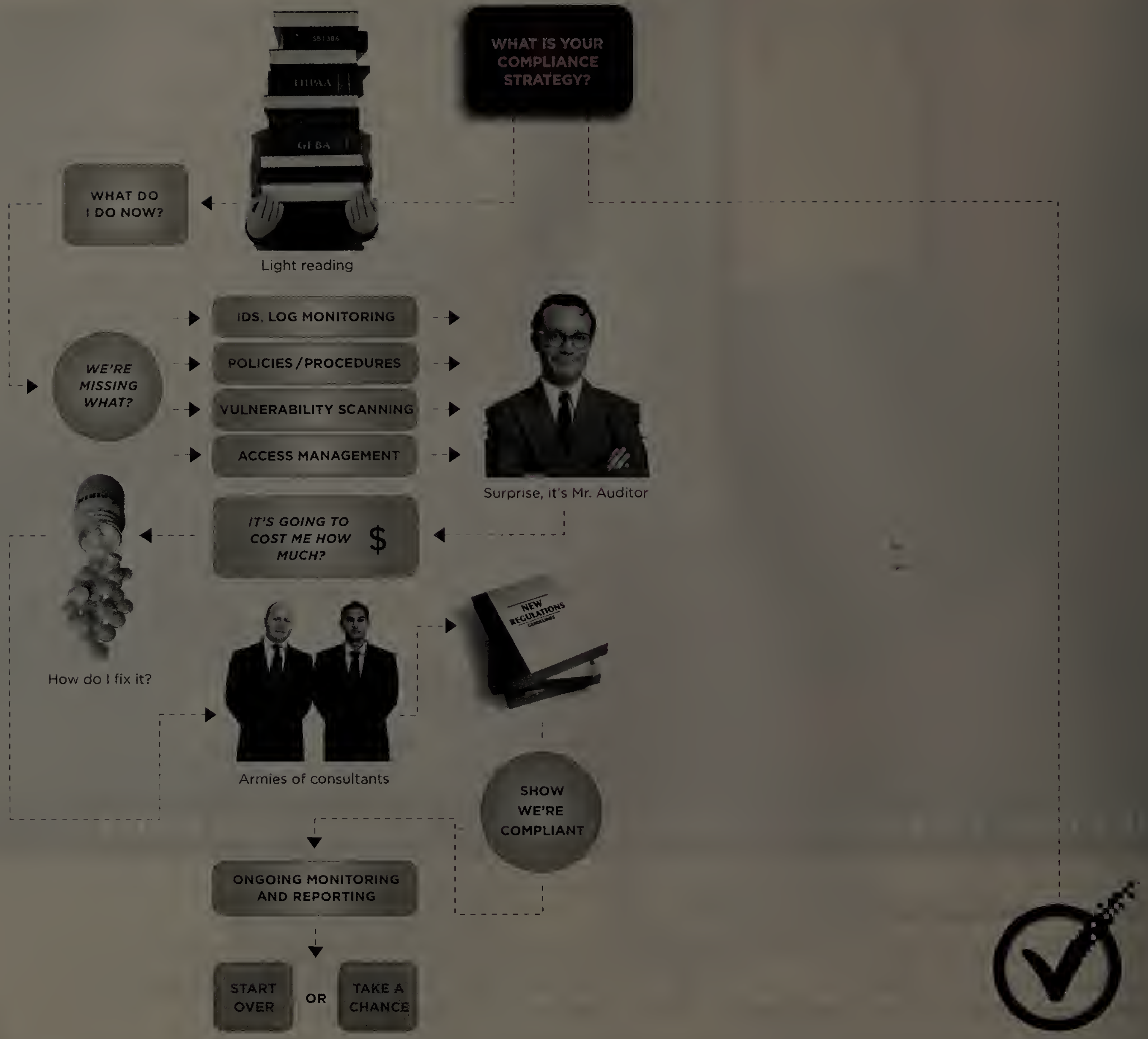

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# NET INFRASTRUCTURE

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## Short Takes

■ **Avaya** last week bought **Nimcat Networks,** a maker of peer-to-peer IP phone software, for $46 million. The deal gives Avaya a different kind of telephony offering than its current IP PBX- and gateway-focused products, in that the Nimcat software only runs on IP phones. According to the companies, this technology lets desktop IP phones communicate without a centralized server or call-control box. The new technology could allow Avaya to integrate more peer-to-peer VoIP technology into its current product menu, while offering an uncomplicated VoIP package to smaller customers. Phones running Nimcat's nimX software include their own call-control, calling features and application software on the phone, such as call hold, forwarding, conferencing and voice mail. Nimcat also has a softphone client for PCs that operates in the same peer-to-peer mode, similar to the softphone client from Skype.

■ **Sana Security** by year-end plans to ship a new version of its Primary Response anti-virus software that will identify and remove malicious software without the use of the signature code used by the majority of anti-virus vendors. The software, which will probably be called **Primary Response 4.0,** also will be the first version of the Sana product that users can run in a stand-alone fashion, without the company's server-side management software, the company says. Most anti-virus products identify malicious software by comparing the software being run to pieces of known worm and virus code, called signatures. Primary Response, however, determines whether or not software is malicious based on a mathematical analysis of what it's trying to do. The idea is that Primary Response can protect users even from unreported viruses, the company says. A beta version of Primary Response 4.0 will be available in November, with a stand-alone version, priced at about $40, expected by year-end. A managed version, which will work with the Sana server software, will ship in early 2006.

# Painless patching

### New products let users patch systems at their convenience.

**BY TIM GREENE**

An emerging category of network equipment is giving network executives more time to install security patches by keeping servers safe until full-blown fixes can be tested and installed.

So far there are two approaches to the problem: software that runs on the servers being protected and an appliance that sits in front of the servers.

Determina makes the software called LiveShield (www.networkworld.com, DocFinder: 9028) and Blue Lane makes an appliance running protective software called PatchPoint.

In both cases, software that approximates the patches written by the vendors of the affected applications fixes the vulnerability so attackers cannot exploit it.

"It's a pretty new type of solution and there may be other vendors we haven't run into yet," says Matthew Jaquith, senior analyst with The Yankee Group.

The products allow patches to be scheduled at the convenience of network executives, which translates into cost savings, according to Bruce Fingles, CIO for MicroMuse, which beta tested the PatchPoint appliance.

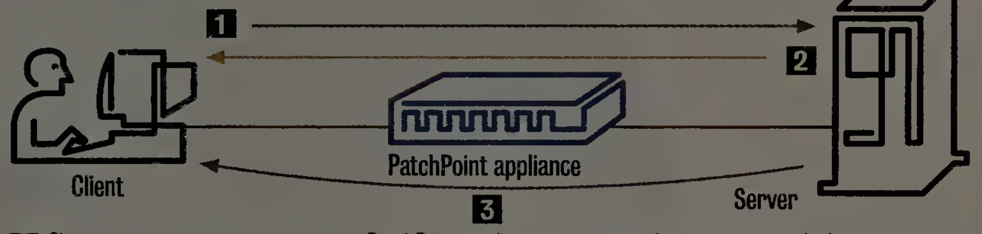
PatchPoint "saves me a lot of time and money," Fingles says. "We don't have to stop everything else we're working on when we do a patch." Instead, he installs the Blue Lane fix to an identified vulnerability in the PatchPoint appliance to protect the affected server.

With the server secured, his staff can test

**See Patch, page 28**

### Patch outside the box

Blue Lane's PatchPoint appliance monitors network traffic in and out of servers to shore up vulnerabilities without requiring any changes to the affected boxes.



**1** Client connecting to server triggers PatchPoint appliance to monitor the interaction with the server.

**2** Server responds to establish client-served session while PatchPoint looks for parts of the transaction that are vulnerable.

**3** Throughout the session, PatchPoint replaces code as necessary to eliminate vulnerabilities just as a vendor-issued patch would.

# Vendor pumps up anti-virus, anti-spam

**BY CARA GARRETSON**

Proofpoint is planning an upgrade to its e-mail security platform that includes a new anti-virus module and enhancements to its anti-spam filtering techniques.

The company's Zero-Hour Anti-Virus module, slated for release in the fourth quarter, aims to protect organizations from malicious code during the crucial period after a virus has been released but before signatures are available, says Andres Kohn, Proofpoint's director of products.

"Anti-virus products do a great job once the virus is known and signatures are created, but still there could be a few hours before they are recognized, so that's the zero-hour window of a virus," Kohn says. "This solution provides a second level of protection that helps organizations protect against a potential virus."

On the back end, the module filters incoming e-mail for clues of virus outbreaks, such as a spike of identical e-mails sent with attachments, Kohn says. Suspicious messages are quarantined at the organization's gateway until anti-virus companies release signatures to identify and block them. Organizations can preset policies to determine what actions should be taken next, such as automatically scanning or deleting the suspect messages.

### Spamalot

Proofpoint's MLX technology looks for up to 200,000 attributes of an e-mail message to determine whether it is spam, the company says.

Using its pattern detection technology, Proofpoint says the new module is at least 95% effective in catching viruses before they enter an organization.

One systems administrator who uses Proofpoint's anti-spam offering is eager to test the new module. "I would hope that it provides the same level of effectiveness against viruses that [Proofpoint's software] does against spam," says Hao Sam, systems administrator with Array Networks, a maker of VPN security appliances that has about 130 e-mail users. "Any product that keeps me from having to spend time with spam or viruses" would be beneficial, he says.

Proofpoint isn't the first company to use a filtering approach to detect virus-laden messages in an organization's incoming e-mail stream. E-mail security appliance maker IronPort, for example, launched a similar product last year. Proofpoint says its Zero-Hour Anti-Virus approach is effective because it can more accurately pinpoint incoming messages that are part of an emerging virus outbreak, and therefore won't quarantine uninfected e-mail messages.

Zero-Hour Anti-Virus costs $30 per user per year, with discounts available for volume purchases. The module works in conjunction with the F-Secure and McAfee anti-virus software that Proofpoint licenses.

**See Proofpoint, page 28**

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# Skype: Hazardous to network health?

**TOLLY ON TECHNOLOGY**

**Kevin Tolly**

While not exactly a low-profile endeavor before its recent acquisition by eBay, Skype is sure to be an even greater presence on the Internet and on home computers — and most likely on your corporate network. But can Skype be hazardous to your network's health?

It might come as no surprise that you could be carrying Skype traffic for your user base, but are you are aware that your LAN and WAN links might be carrying VoIP traffic of complete strangers? That is, traffic of VoIP conversations that neither originate nor terminate on your network. In effect, you are donating what can be scarce and expensive WAN bandwidth to your newly minted multimillionaire friends at Skype. (I'm sure, however, that they greatly appreciate it!)

While "free VoIP anywhere" has been too good a deal for many to forgo, little or no attention has been paid to how Skype does what it does. Go to Skype's Web site and it is all about "community," a running tally of the number of downloads (already 168 million) and their pay-for-use adjunct services SkypeIn and SkypeOut.

When I first became aware of Skype some time back, there was almost constant flag-waving about being the first and only peer-to-peer phone service. This was often paired with noting the lineage with KaZaa. Somewhere along the line, though, someone at Skype decided to downplay this aspect of the service.

At The Tolly Group, we've taken a closer look at the technical aspects of the service. Because of the dearth of information available to us, we learned most of what we know by studying Skype "in the wild" — that is, running the service, capturing the traffic and analyzing the traces.

The most fundamental information you need to know is that Skype is a peer-to-peer service. Let's quote the Skype Web site on what that means: "A true [peer-to-peer] system, in our opinion, is one where all nodes in a network join together dynamically to participate in traffic routing-, processing- and bandwidth-intensive tasks that would otherwise be handled by central servers."

Your corporate desktops and notebooks are the "peers" that are consigned as Skype pleases to relay traffic and function as mini-servers in the Skype universe. (A Web log entry on the eBay acquisition envisioned Skype producing an auction conference system that could handle 500 callers at once. Let's hope they don't decide to route that through your network some day.)

According to Skype — and validated by our research — a VoIP call will consume between 24 and 128K bit/sec. When a Skype station is functioning as a relay, the bandwidth is doubled. (We found instances when calls between adjacent stations were relayed to somewhere a continent away.)

When you are functioning as a relay, you have no way of knowing this other than running constant traces on your network interfaces. Read the license agreement and you'll realize that you've given them permission for all this — though the old license was less subtle.

And, lest you think that you can stop all this by exiting Skype, think again. You might not be using Skype — but it might be using you. Skype continues to run in the background unless you uninstall it or kill the process.

Clearly, Skype needs to become a better corporate citizen.

*Tolly is president of The Tolly Group, a strategic consulting and independent testing company in Boca Raton, Fla. He can be reached at ktolly@tolly.com.*

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## Patch

continued from page 25

the patch issued by the application vendor to check whether it is compatible with other software running on the same server hardware, he says. "Most patches break one application or another. You really have to check them in a test environment."

Before using the appliance, he considered whether the risk posed by the vulnerability was outweighed by the cost and disruption of installing the patch right away. "We did that kind of risk analysis," Fingles says.

Determina and Blue Lane's fixes are reverse engineered from the patches issued by software vendors, and that presents a leap of faith for customers, Yankee Group's Jaquith says. "Both companies have the same challenge," he says. "They don't know everything the software vendors put into the patch. You have to hope their engineers are savvy. I think both vendors would concede that their software isn't a replacement for a real patch."

Both vendors limit the applications they support, but seem to be hitting widely used ones that would be critical to a business, Jaquith says.

With its software running directly on servers and able to inject LiveShield code into applications as they are running, Determina seems to have the potential to deliver tighter control over vulnerabilities, Jaquith says. Blue Lane's PatchPoint, on the other hand, monitors application traffic as it traverses the network and proxies client-server application exchanges to plug security holes, he says.

At a high level, PatchPoint acts like an intrusion-prevention device in that it takes in traffic, inspects it to Layer 7, performs stateful analysis and modifies the output, Jaquith says.

Determina charges $750 per server for its software, while Blue Lane charges either $18,000 or $50,000 for its two models.

Customers who try these products will have to consider that they are using very young technology that doesn't have much track record yet, Jaquith says. "It's pretty close to the bleeding edge at the moment," he says.

Both of Blue Lane's appliances are available now. The G/250 costs $18,000 and supports up to 30 servers. The G/450 costs $50,000 and supports up to 200 servers. The company also makes a management appliance that can oversee up to 100 gateways and costs $12,500. ■

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## Proofpoint

continued from page 25

and is an optional component of Proofpoint's Protection Server gateway software and Messaging Security Gateway appliance.

Proofpoint last week also announced enhancements to its anti-spam MLX technology, a machine-learning system that classifies and analyzes content. New features include associating scores with senders' reputations to identify those that often send unwanted messages. Connections coming from suspect senders can be throttled or blocked, Kahn says.

Another new feature is the ability to discern intentional misspellings from unintended ones, letting the software block spam selling Viagra with the product name spelled V-l-agra, for example. The upgrade can also block messages that contain images with text embedded or attached, which often trick filters that scan only the text of an e-mail, Kohn says.

These updates to MLX are available now to existing customers of Proofpoint's Spam Detection module, which runs on Proofpoint's Protection Server gateway software or Messaging Security Gateway appliance, that subscribe to the related update service. For new customers, the Spam Detection module costs between $3 and $40 per user, per year, depending on the number of users. ■

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# Wave Systems unveils encryption software

**BY ELLEN MESSMER**

Wave Systems last week rolled out an upgrade to its PC-based encryption and authentication software that adds a way for customers to remotely manage security policy and receive copies of user-generated keys as a corporate backup.

Embassy Trust Suite 5.0 provides Microsoft Office file and folder encryption and digital signing on any PC running the Trusted Computing Group's Trusted Platform Module (TPM). The latest version of Wave Systems' encryption software, which competes against similar offerings from IBM and others, adds a server component that lets IT managers set policy and store copies of user keys on Microsoft's Active Directory.

"When any user creates a key, an encrypted copy of that private key is sent to the centralized server," says Steven Sprague, Wave Systems CEO. The software also includes a way security managers could set a policy requiring use of biometric sensors, such as fingerprint scanners, on a machine to unlock a store of keys that are held on the TPM hardware.

With the product, separate policies could be established for different corporate divisions, such as finance or human resources, so that access to private keys through passwords or smart cards might be required. Sprague said computer manufacturers, including Lenovo (IBM) and Dell, have shipped millions of PCs with TPM modules in them.

Restaurant chain Papa Gino's, of Dedham, Mass., says it considers data encryption so important in security that it is making use of TPM mandatory with new laptops and PCs purchased by the firm.

"We now use TPM with 65 out of our 1,500 laptops and PCs, and we're migrating to it with new purchases," says Chris Cahalin, network manager with the 400-restaurant chain operating throughout New England.

Cahalin says his firm's research and testing of desktop encryption software to use the encryption capabilities of TPM convinced him that Wave Systems' software worked well across vendor boundaries, whether it was Dell, HP or IBM PCs.

The feature for storing copies of user encryption keys was critical. "You can't operate in an enterprise environment with this backup," he notes. He says TPM ships with most PCs today without additional cost, but IT managers might not be aware of the security benefits TPM offers.

Embassy Trust Suite 5.0, available this week, starts at $50 per seat. ■

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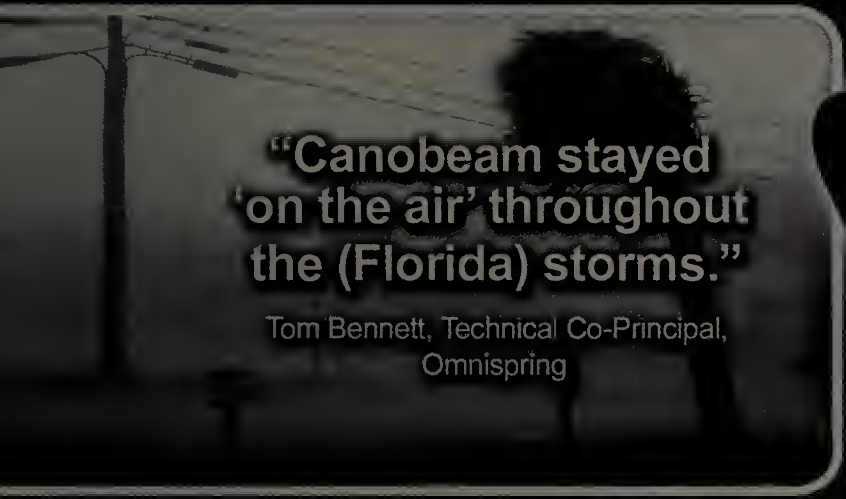

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## Short Takes

■ **Vodafone Group** plans to introduce a PC with a built-in 3G data card in the next 18 months, a company executive said last week. "We're working aggressively with a number of OEMs around the world to make that a reality," said Nick Jeffery, head of business marketing for Vodafone. He said he expects the laptops to reach the market in about a year and a half. Across the ocean, Vodafone's U.S. joint venture Verizon Wireless last week introduced a laptop with built-in WAN capabilities. The Dell laptop includes a $250 wireless data card operating on Verizon Wireless' high-speed Evolution-Data Optimized network to provide an average of 400K bit/sec to 700K bit/sec.

■ **Red Hat** has announced that Oracle, EMC and Network Appliance support its Global File System. Red Hat GFS now works with EMC Clariion, Oracle RAC, EMC Celerra iSCSI network-attached storage and Network Appliance for storage-area network systems. GFS is an open source, clustered file system designed for high-performance workloads. It lets customers cluster file servers and storage into a shared system, which eliminates conflicts when different servers want to access the same file concurrently. Red Hat GFS supports IA-32, IA-64 and AMD Opteron processors. It costs $2,200.

■ **The Mozilla Foundation** has released a new version of its Firefox browser that contains fixes for two recently reported critical security bugs. The most widely reported flaw concerns the International Domain Name feature that Mozilla products use to process Web pages that do not use the Latin alphabet. Firefox 1.0.7, which was released last week, also fixes a critical flaw in the way the Mozilla software handles Unix and Linux shell commands that could allow attackers to run unauthorized software on some systems.

## ONStor, 3Par merge NAS/SAN

**BY DENI CONNOR**

Network-attached storage vendor ONStor and storage-area network vendor 3Par last week said they have joined forces to deliver an offering that combines the best of both of their technologies.

The new UtiliCat is a unified file- and block-level device that lets customers view their SAN and NAS from a single management interface.

"Because I am IT, as well as space-constrained, this [common management] is a true advantage of the box," says Burzin Engineer, manager of infrastructure services for online retailer Shopzilla in Los Angeles. Engineer, who has 15T bytes of UtiliCat storage, had been using BlueARC NAS and EMC Symmetrix storage, but had to manage them from two interfaces.

Both ONStor and 3Par support the box and use a common support line.

Engineer had to be convinced that the joint support scheme would work, but says he has yet to be "yo-yoed from vendor to vendor."

The UtiliCat consists of a two- to four-node cluster of ONStar Bobcat NAS gateways connected to two to eight 3Par InServ block controllers per cluster for a capacity of 2.5T to 384T bytes. As many as four to 400 file systems can be supported per cluster.

The UtiliCat has file throughput up to 960M bytes/sec and up to 2.8G bytes/sec of block throughput. It has as many as 128 Fibre Channel ports for connection to the incorporated SAN storage.

"The combination of these two next-generation NAS and SAN solutions makes them pretty competitive to leading vendors, such as Network Appliance, and to a lesser-extent EMC," says Tony Asaro, senior analyst for the Enterprise Strategy Group. "There is more and more demand among customers for a converged solution."

The UtiliCat will compete mainly with Network Appliance's 980C clustered file server appliances. The 980C has eight Fibre Channel connections to the SAN and supports four file systems. It will also compete with EMC's Celerra NSX NAS gateway, which attaches to Symmetrix DMX or EMC Clariion CX systems and the IBM TotalStorage NAS Gateway 500.

A UtiliCat with 2.5T bytes of capacity starts at $175,000. ■

**ONStor's storage devices work with 3Par's.**

## Big Blue, Red Hat go global on Linux

**BY CHINA MARTENS, IDG NEWS SERVICE**

IBM and Red Hat unveiled a joint worldwide initiative aimed at speeding the development and adoption of Linux-based applications. The companies are placing particular emphasis on emerging markets, such as China, India, Russia and South Korea, according to an IBM executive. The deal is similar to one IBM struck in March with Red Hat's main Linux competitor, Novell.

### Help desk

IBM also offers

**29 new Linux tutorials**

on its DeveloperWorks Web site, says Todd Chase, program director of IBM Innovation Centers worldwide.

IBM and Red Hat will provide developers with technical support and implementation expertise to help them more quickly port and certify their new applications on IBM hardware and software and Red Hat's Enterprise Linux operating system, according to Todd Chase, program director of IBM Innovations Centers worldwide. "The snowball [demand] for Linux is continuing to grow," he says. "We keep hearing people asking for more help."

"One of the key issues with any environment is that the customer needs to have the feeling that if they adopt [the technology], there's a big player behind it that they can go to for support," says Judith Hurwitz, president of consultancy Hurwitz & Associates. "Or if there's a problem, a bump in the night, developers want to be able to hold someone responsible."

Developers will be able to reach IBM and Red Hat support in person or remotely at 15 of IBM's 25 Innovation Centers around the globe, Chase says. While he couldn't put a financial figure on IBM's support for the initiative with Red Hat, he expects 20 to 25 IBM staff members to be in the 15 centers. Red Hat will provide training on its Linux distribution at each of the sites, Chase adds.

Six of the 15 centers are in emerging markets. Three are in China — in Beijing, Guangzhou and Shanghai — and one each in Bangalore, India, Seoul and Moscow. The others are in Sydney, Tokyo, Paris, Hursley in the U.K., Stuttgart in Germany, Amsterdam, and three in the U.S., in Waltham, Mass., Chicago and San Mateo, Calif.

In 2004, IBM provided support at its Innovation Centers to 400 independent software vendors, enabling them to run their applications on Linux, Chase says. By the end of last month, IBM had assisted the same number of independent software vendors, he adds. In U.S. Innovation Centers, 70% to 75% of the contact with developers is done remotely, while that figure is in the 50% range in Europe and in the 20% range in Asia-Pacific, Chase says.

IBM also offers 29 new Linux tutorials on its DeveloperWorks Web site, Chase says. The tutorials are aimed at both developers and students looking to take Linux Professional Institute's junior and intermediate administration exams. Of 600 IBM tutorials, 79 focus on the open source operating system.

IBM estimates that more than 100,000 Linux developers have joined DeveloperWorks (www-128.ibm.com/developerworks) and have created more than 6,500 Linux-based applications since 2003, according to information provided by the company. ■

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# Stolen university laptop recovered, but not data

**BY ROBERT MCMILLAN, IDG NEWS SERVICE**

Campus police at the University of California, Berkeley, have recovered a stolen laptop that contained information of more than 98,000 of the school's graduate students.

The laptop's hard drive had been wiped clean of information and then sold on an Internet auction site, making it impossible to determine whether the sensitive information it had contained was accessed, the university said in a statement.

The laptop was stolen March 11 after it was left unattended in the school's Graduate Division, prompting U.C. Berkeley to send letters and e-mails to the 98,369 graduate students and applicants whose names and personal information had been stored on the computer.

Many of the laptop's files contained sensitive information, including birth dates, addresses, Social Security numbers and names. California law requires that efforts be made to contact those affected in data theft cases.

## Sold on eBay

About a month after the theft, an unidentified woman sold the laptop to a San Francisco man, who then sold it on eBay to an unsuspecting South Carolina resident, says Janet Gilmore, spokeswoman for U.C. Berkeley.

That San Francisco man, Shuki Alburati, was arrested June 8 and charged with possession of stolen property, Gilmore says. That case is pending, she says.

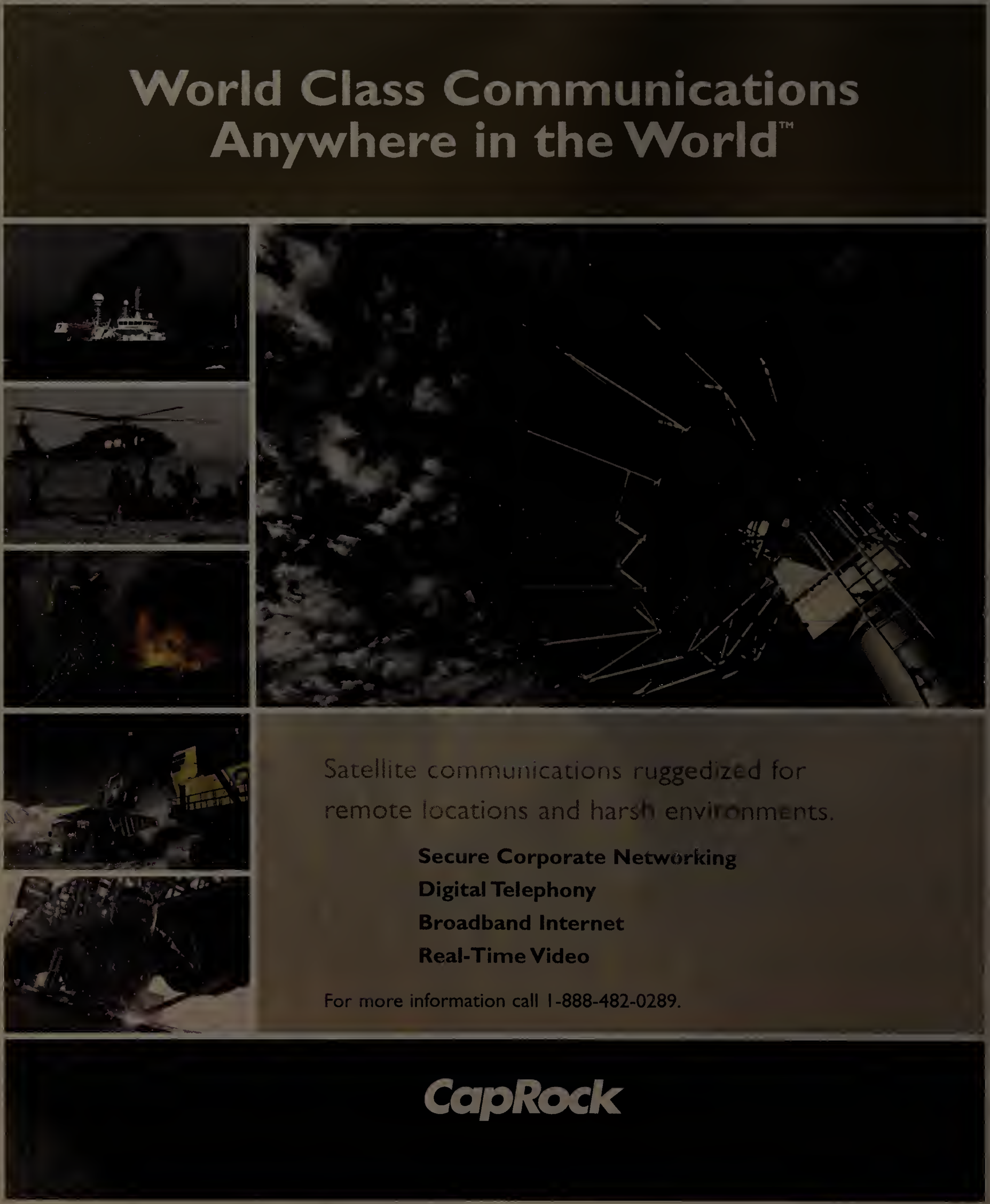
By the time it was recovered, the computer's hard drive had been outfitted with a new operating system, making it virtually impossible to determine whether the sensitive information had been accessed, Gilmore says.

Gilmore would not say how the police tracked the laptop to South Carolina.

In late April, Berkeley hired PricewaterhouseCoopers to conduct an audit of how the school handles sensitive material, and the firm is evaluating how to implement the audit's recommendations, Gilmore says.

Before this theft, the California university system had been working to encrypt data on its laptops and portable devices, a policy spurred by similar data thefts.

Last September, one of the state universities lost a laptop hard drive containing sensitive information on 23,000 students and employees. ■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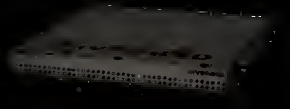

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## MONDAY, OCTOBER 24

Registration Open 8:00am - 8:30pm

| | |
|---|---|
| 9:30am – 11:30am | Primer and Tutorial Tracks |
| 11:30am – 1:00pm | Luncheon |
| 12:00pm – 5:00pm | Pre-Conference Golf Outing |
| 1:00pm – 5:00pm | IDC Analyst Briefing |
| 1:00pm – 5:25pm | SNIA Technical Tutorials |
| 4:40pm – 6:30pm | End User Town Hall Meeting |
| 5:00pm – 7:00pm | Speed Dating with IDC:<br>A Channel Partner Networking Event at SNW |
| 7:00pm – 9:00pm | Welcome Reception |

## TUESDAY, OCTOBER 25

Registration Open 7:00am - 8:00pm

| | |
|---|---|
| 7:00am – 8:00am | Breakfast |
| 8:00am – 12:30pm | General Conference Sessions |
| 12:45pm – 2:00pm | Luncheon |
| 2:10pm – 5:40pm | Concurrent Sessions (IT End-User Case Studies, SNIA Technical Tutorials, Deployable Solutions Tracks) |
| 5:40pm – 8:40pm | Expo with Dinner and Interoperability & Solutions Demo |

## WEDNESDAY, OCTOBER 26

Registration Open 7:00am - 7:30pm

| | |
|---|---|
| 7:15am – 8:15am | Breakfast |
| 8:30am – 12:15pm | General Conference Sessions |
| 12:15pm – 2:00pm | Expo with Luncheon |
| 12:15pm – 7:15pm | Interoperability & Solutions Demo |
| 2:10pm – 5:40pm | Concurrent Sessions (IT End-User Case Studies, SNIA Technical Tutorials, Deployable Solutions Tracks) |
| 4:00pm – 7:00pm | Expo Open |
| 7:00pm – 9:30pm | Gala Evening with Dinner and Entertainment |

## THURSDAY, OCTOBER 27

Registration Open 7:30am - 10:30am

| | |
|---|---|
| 7:30am – 8:30am | Breakfast |
| 8:30am – 12:00pm | Concurrent Sessions (IT End-User Case Studies, SNIA Technical Tutorials, Deployable Solutions Tracks) |
| 12:00pm | Conference Concludes |

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- ☐ Health/Medical/Dental Services
- ☐ Retailer/Wholesaler/Distributor (non-computer related)
- ☐ Transportation/Utilities
- ☐ Communication Carriers (ISP, Telecom, Data Comm, TV/Cable)
- ☐ Construction/Architecture/Engineering
- ☐ Data Processing Services
- ☐ Education
- ☐ Agriculture/Forestry/Fisheries
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**Your Job Title/Function:**
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- ☐ CEO, COO, Chairman, President
- ☐ CFO, Controller, Treasurer
- ☐ Executive VP, Senior VP, VP, General Manager
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**Number of employees in your entire organization (ALL locations)**
- ☐ 20,000 or more
- ☐ 10,000 - 19,999
- ☐ 5,000 - 9,999
- ☐ 1,000 - 4,999
- ☐ 500 - 999
- ☐ 100 - 499
- ☐ 50 - 99
- ☐ Less than 50

**What is your organization's annual IT/IS budget for all IT/IS products?**
- ☐ $1 Billion or more
- ☐ $500 Million - $999.9 Million
- ☐ $100 Million - $499.9 Million
- ☐ $50 Million - $99.9 Million
- ☐ $10 Million - $49.9 Million
- ☐ $1 Million - $9.9 Million
- ☐ $500,000 - $999,999
- ☐ $250,000 - $499,999
- ☐ $100,000 - $249,999
- ☐ Less than $100,000

**What is the estimated annual revenue of your entire organization?**
- ☐ Over $10 Billion
- ☐ $1 Billion - $9.9 Billion
- ☐ $500 Million - $999 Million
- ☐ $100 Million - $499 Million
- ☐ Less than $100 Million

**What is the one item that best describes your involvement in the IT purchase process?**
- ☐ Authorize/approve purchase
- ☐ Evaluate/recommend products, brands, vendors
- ☐ Specify features/technical requirements
- ☐ Set budget for expenditures
- ☐ Determine need to purchase
- ☐ Create IT strategy
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# APPLICATION SERVICES

■ CRM ■ MESSAGING/COLLABORATION ■ WEB SERVICES ■ ERP ■ E-COM ■ NETWORK AND SYSTEMS MANAGEMENT

## RealOps extends automation features

BY DENISE DUBIE

RealOps last week updated its automation software and introduced an add-on module the company says will help customers use software to tackle common daily operations tasks, such as checking a server for availability.

The company made Version 2.1 of its Automation Management Platform (AMP) software available with performance and ease-of-use enhancements. The software add-on, dubbed AutoPilot, provides users with "mini-LEGOs" to build processes specific to their environment, according to Dennis Drogseth, a vice president with Enterprise Management Associates, a market research firm.

RealOps says it based the AutoPilot module on processes similar to those laid out by the Information Technology Infrastructure Library (ITIL) and equipped it to let customers put their own processes into the automation software.

"RealOps is focusing on the nuts-and-bolts specifics of process automation," Drogseth says. "The process module supports the equivalent of ITIL's incident and problem management, primarily."

AutoPilot works with AMP 2.1, which uses server and agent software to collect data and integrate it into a central location.

The software also uses connectors to collect data from third-party systems, such as other management tools or CRM systems. The data is aggregated, normalized and correlated against AMP's predefined activity library, which lets the software identify whether the collected data matches a predefined automated action in AMP's library and kick off the automation. If a server doesn't respond to predefined standards, the software will generate a trouble ticket.

The library, which users can customize, includes workflows and activities that could be taken in response to specific events or used to complete a process. The company says customers can design their own workflows based on conditional statements. For example, if one server generates five performance events, the workload

See RealOps, page 38

### Short Takes

■ **Microsoft** has acquired **Alacris,** a vendor of software products for certificate management and identity assurance, the companies announced last week. Terms of the deal were not disclosed. Microsoft said Alacris has 24 employees, and all will be evaluated to see how they fit into Microsoft's organization. The acquisition adds to Microsoft's strategy of providing easily administered identity and access management, the company said. Alacris' idNexus Identity Assurance Management System is aimed at helping companies using security technologies such as smart cards and public-key infrastructure deploy them in a user-friendly way. Alacris' technology provides digital certificate and life-cycle management products that help customers deploy, manage and maintain security systems using Windows-based smart cards.

■ **SAP** has agreed to buy privately held **Triversity,** which specializes in software for the retail industry. The acquisition will help SAP expand its offering in the retail sector, especially in the area of point-of-sale systems, the company says. It expects to complete the acquisition in October. SAP did not disclose financial details. With 250 customers in 32 countries, Triversity offers software to support a range of retail activities, including store inventory management and multichannel customer service, according to SAP. With more than 2,700 customers worldwide, SAP views the retail industry as a significant growth opportunity as retailers move away from in-house software to standard systems, the company says.

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**InSite:** Lessons from Leading Users

## User: Oracle upgrade goes smoothly

BY STACY COWLEY, IDG NEWS SERVICE

For one longtime PeopleSoft customer, last year's Oracle takeover came at an awkward time: The Center for Remote Enterprise Systems Hosting in Sioux Falls, S.D., was in the process of spinning out from Dakota State University, and was about to sign the first commercial contract for its hosted PeopleSoft applications services.

Suddenly, the fate of the software line CRESH had built its entire business around was in doubt. CRESH Executive Director John Webster wondered if Oracle would live up to the support promises it made during its 18-month fight to buy PeopleSoft.

Eight months later, Webster says the transition to Oracle has gone relatively smoothly. The big test will come over the next few years, as Oracle attempts to mesh its profusion of heterogeneous applications into one unified line, code-named Fusion. Still, the early indications are that Oracle will be sensitive to PeopleSoft customer's needs, according to Webster.

> "From my perspective, [Oracle] brought the right talent on board and has done a great job of making it work."
>
> *John Webster, CRESH executive director*

"The integration has been better than anything I heard," he says.

Oracle is still selling the PeopleSoft licenses CRESH needs, and executives all the way up to Oracle's top management echelon have responded to customers' questions and concerns. Oracle has helped CRESH connect with those in charge of areas that touch CRESH's business, including executives in its small and midsize business, OnDemand hosting and public sector units.

Webster says he hasn't been pushed to switch his company's focus from PeopleSoft applications to Oracle's E-Business Suite. Meanwhile, Oracle's takeover doesn't seem to have affected the willingness of CRESH's customers to commit to PeopleSoft: Clients say that as long as whatever is on the front end works, what's happening behind the scenes is irrelevant, Webster says.

Nonetheless, PeopleSoft's new ownership has prompted some changes in CRESH's operations. The company is migrating its database back end from SQL to Oracle. While PeopleSoft had strong technical ties with SQL, supporting its own database will be Oracle's priority. Oracle is offering incentives to make switching a financially attractive option for CRESH.

Webster also is preparing to shift from a Microsoft-based to a Linux-based infrastructure, likely supported by Red Hat. He expects that change to better position CRESH for the coming Fusion migration, and to align it with general IT industry trends toward more open systems.

He's resigned to dealing with some Fusion turbulence. "It's going to be major migration, but I think that Oracle understands enough about the pain of migration that they're going to make it as painless as possible," he said.

CRESH is a relative small fry among Oracle's customer base: The venture's two dozen customers mostly comprise educational institutions contracting for hosted application test beds to be used in IT training classes.

Its modest goal is to eventually support a handful of midmarket clients and generate a few million dollars per year in revenue.

Oracle's announcement last week of plans to buy Siebel Systems added to Webster's certainty that CRESH is casting its lot with a vendor serious about becoming the dominant force in ERP applications. As a hosted software provider, Webster is hopeful that the deal, which brings to Oracle Siebel's CRM OnDemand service and management team, will help Oracle improve its strategy for tapping customers looking for managed application services.

His one concern about Oracle's consolidation mania is that it will increase software prices by curtailing the number of vendors among which customers can comparison shop. He's also leery of what reduced competition will do to research and development advances. ■

# Start-up aims to simplify virtualized testing

**BY JENNIFER MEARS**

Start-up Akimbi Systems says it has the answer for IT shops looking to reduce the headaches involved with setting up multiple test environments for complex software development efforts.

The company, founded in 2004 by executives from Ensim, a virtualization and Web hosting firm, last week introduced its Slingshot capture-and-restore system. Slingshot is built on virtualization technology from VMware and Microsoft. It is aimed at letting end users quickly set up, tear down and store distributed software configurations for test and development and quality assurance.

## Cutting costs

As software development becomes more complex companies are turning to virtualization technology to reduce hardware costs associated with setting up physical environments for each test scenario.

But the number of virtualized test environments has become difficult to manage with today's test and development tools from vendors such as IBM and Mercury Interactive, Akimbi executives say.

"The problem is because of the increasingly complex nature of software, gaps have opened up," says James Phillips, Akimbi's co-founder and CEO.

For example, in many cases IT has to manually set up multiple system configurations for testers, which can take hours or even days. And when a tester finds a bug, it's nearly impossible for developers to recreate the identical software environment to fix it.

Using server virtualization technology as its base, Slingshot configures, stores and manages multi-machine software environments. The Slingshot software is deployed on any x86 system and then is used to manage a pool of servers dedicated to test, development and quality assurance. Developers and testers interact with the capture-and-restore system via a Web browser.

Users direct Slingshot to configure certain environments, which are then automatically deployed in virtual machines on appropriate servers within the pool of resources. Users also can save "live" software configurations to a storage library for later use.

While end users have been using virtualization for test environments for some time, having software designed specifically for testing demands is unique, says Carey Schwaber, an analyst at Forrester Research.

"Akimbi is the only company I know of that does pure test environment virtualization," she says. "They have specific functionality for testing, such as making it easy to manage a lot of different images ... and being able to capture the state of a virtual environment at the point at which a defect is found, then package it and share it."

The challenge for Akimbi will be integrating its tool into packages from third-party vendors such as Mercury, Schwaber says.

The Slingshot system is priced starting at $20,000 for a 10-server resource pool. A two-server resource pool version is priced below $1,000 for a limited time, Phillips says. ■

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**RealOps**

continued from page 37

could be shifted to another server.

With the process templates, Drogseth says RealOps is providing tools to help IT managers more quickly develop processes to enable service management. The company competes with start-ups OpTier and Optinuity, and could be considered complementary to large systems management products from BMC, Computer Associates, HP and IBM, and their respective visions of more automated data centers.

Available now, RealOps' AMP 2.1 costs from $150,000 to $200,000. The AutoPilot module costs about $30,000. ■

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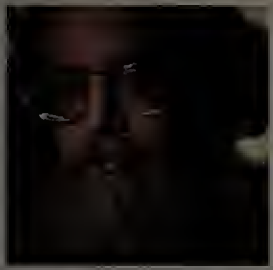
# Misunderstanding the fundamentals



**NET INSIDER**

**Scott Bradner**

In mid-September the House Energy and Commerce Commission took its first shot at trying to set the ground rules for telecom reform. The commission was apparently trying to produce a more balanced starting point than the strongly pro-carrier bill proposed by Sen. John Ensign (R-Nev.). (See my earlier column, "Making Verizon giddy," www.networkworld.com, DocFinder: 9025.)

Three Republicans and two Democrats spearheaded the effort, which succeeds in being a bit less of an incumbent local exchange carrier rescue plan than Ensign's proposal. But the bipartisan plan does get some of the basics wrong, so it is too soon to tell whether something helpful will result.

The new document (DocFinder: 9026) is a staff discussion draft and, I hope, will undergo significant modification before it is formally introduced. This draft proposes federal regulation of broadband data and video providers and of VoIP providers that would preempt any state or local regulations. But the definitions in the draft are somewhat funny. It says, "broadband Internet transmission service" (BITS) is a service that offers "the transmission of information in a packet-based protocol, including TCP/IP protocol or a successor protocol, regardless of facilities used." Likewise, a "broadband video service" is one that offers a "two-way, interactive service," with or without fee, to the public "regardless of the facilities used" and "integrates, on a real-time and subscriber customizable basis, a video programming package" and "integrates the capability to access Internet content of the subscriber's choosing. The draft also defines a "VoIP service" to be a "packet-switched voice communications service . . . effectively available directly to the public, regardless of the facilities used; and enables a subscriber to send or receive voice communications . . . over a broadband transmission service to or from any subscriber with a telephone number . . . or other identification method as designated by the commission."

The draft would require all BITS, broadband video and VoIP service providers to register with the government before they could offer service (there is a grace period for providers already in business).

What's wrong with this picture? Note that none of the definitions require a facilities-based service provider. All of these services can be offered over any infrastructure that supports IP. In theory, service providers anywhere in the world could provide them all, as long as there is sufficient bandwidth in the communications path. The draft does not seem to understand this basic feature of the Internet.

Also, the U.S. has never required registration of Internet-based service providers, and such a move would have a big, and negative, impact on service innovation. Based on the current wording, Apple would have to register in order to provide iChat service.

The draft does have good words about BITS providers not getting in the way of subscribers' use of the Internet. It also warns not to "block, impair, or interfere with the offering of, access to, or use of" Internet content or services and specifically permits governments to offer these services to the public as long as they follow the same rules as commercial providers.

If the House staff ever figures out how the Internet works and redoes the draft to separate regulation of physical plant from regulating — where actually required — services that use that physical plant, we might get somewhere.

Disclaimer: Harvard has schools that debate the need or non-need for regulations, but I did not ask them about this article. So the above separation plea is my own.

*Bradner is a consultant with Harvard University's University Information Systems. He can be reached at sob@sobco.com.*

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# SERVICE PROVIDERS

# Primer: Here's the lowdown on IMS

**BY STEPHEN LAWSON, IDG NEWS SERVICE**

The latest buzzword in telecom isn't the name of a box, an application or a service. Instead, IMS is a way of organizing all those elements and more.

IP Multimedia Subsystem is an architecture that defines how IP networks should handle voice calls and data sessions. It essentially takes the place of the control infrastructure in the traditional circuit-switched telephone network, with the key difference that it separates services from the underlying networks that carry them. That way, services such as text messaging, voice mail and file sharing can reside on application servers anywhere and be delivered by multiple wired and wireless service providers. One system could hold information about the preferences and access rights of each user and made available on many others for roaming.

"The subscriber is at the center of the universe now, instead of everything revolving around the network," says Joe McGarvey, an analyst at Current Analysis. Whether users are in the office, at home or on the road, they will have access to the best possible resources and ways of communicating, according to McGarvey and other industry analysts, carriers and vendors. Plus, IMS should make it less expensive and risky for service providers to invest in new services, a boon to companies, he says.

"They're going to see a lot more interesting applications [that will be] introduced a lot more quickly than they are now," McGarvey says.

IMS originated in the Third-generation Partnership Project (3GPP), which was looking for a common way for 3G mobile operators migrating from Global System for Mobile Communications to deliver data services. However, in the past year or so it has been embraced by other standards bodies for both wired and wireless networks. At its core is Session Initiation Protocol (SIP), a signaling system for setting up and handling calls and data sessions, which already is the standard for VoIP products. That is helping IMS gain backing

See IMS, page 42

## Benefits of IMS

Possible benefits of the IP Multimedia Subsystem architecture.

- Fixed-mobile convergence.
- More push-to-talk offerings.
- Easy multimedia sessions.
- Better-quality VoIP.
- Less phone tag.
- A proliferation of new services.

## Short Takes

■ **Sprint** and **Avaya** last week said they will collaborate on development and delivery of hosted VoIP wireline and wireless services for the North American marketplace. Under the agreement, the companies will jointly develop, market and support customer premise equipment- and network-based VoIP services for business customers. Sprint will offer customers Avaya's portfolio of hosted IP communications applications, including IP Telephony, Wireless Integration and Messaging. Sprint will supply customers with hosted IP telephony and wireless services and applications on a per-seat, per-month basis. The first service the companies expect to deliver is Sprint Hosted Messaging, to be available in the fourth quarter. Hosted IP Telephony and Wireless Integration services is to follow in 2006. Sprint Hosted Messaging is a managed service that provides voice-messaging functions on a per-seat, per-month basis. It will be targeted at companies migrating to IP telephony or upgrading existing messaging systems. Sprint did not disclose pricing for the service.

■ **Axerra Networks**, a maker of products designed to enable carriers to extend legacy network services over mobile, MPLS and other newer network architectures, last week announced $16.25 million in third-round funding. The company says the latest round was led by Carmel Ventures. The company says it plans to use the funding to support growth of its production, sales and support efforts. Axerra has collected a total of $43.75 million in funding.

# VON offers glimpse at new VoIP wares

## MCI unveils managed IP PBX offering.

**BY JOHN DIX**

BOSTON — MCI used the Fall VON 2005 Conference & Expo in Boston last week to announce a Managed IP PBX service with partners NEC and Cisco. The service is targeted at companies with 200 to 5,000 users and complements other VoIP offerings in MCI's Advantage Portfolio, including its Hosted IP Centrex service.

One of MCI's strengths is its full portfolio of VoIP offerings, said Nancy Gofus, senior vice president of IP Services. MCI now can either install and manage your IP PBX or host those capabilities in the cloud, and integrate your legacy voice gear using the existing IP Integrated Access service.

Customers can expect to pay $250 to $350 per user for NEC's upfront planning and implementation work for the Managed IP PBX service, and about $650 per user for Cisco's IP telephony gear, said MCI's Jim DeMerlis, vice president of managed network services.

MCI's ongoing monitoring, fault isolation, maintenance and optimization of the resultant network will cost $7.50 per handset, per month for up to 200 handsets, with that dropping to $5 per handset, per month when 1,000 sets are managed and to around $3 for still larger implementations.

The company will pitch Managed IP PBX, promising cost savings, reduced complexity and the ability to leave the driving to MCI, DeMerlis said.

"We have 3,200 managed WAN customers today we can leverage," said Laurie Shook, director of IP Telephony.

These are mid- to high-end commercial companies that already trust us, DeMerlis added. "Now they can look to us for all their VoIP needs."

With Managed IP PBX available in 52 countries from the get-go, analysts questioned whether MCI was changing focus, emphasizing this new approach more than the previously announced Hosted IP Centrex service. The latter is available in the U.S. today and won't be rolled out globally until next year.

IP Centrex requires investment in the network, Gofus said, and that takes time. "With the Managed IP PBX offering, NEC and Cisco already have people on the ground in 52 countries."

See MCI, page 42

## Yahoo working to bring customers intelligent presence.

**BY TIM GREENE**

BOSTON — A Yahoo official last week said the company has new services on tap with major traditional phone carriers that will blend its IP technology with the public switched telephone network.

The company has services in the offing with BT and SBC that employ the unique technologies of Yahoo and the PSTN, Brad Garlinghouse, vice president of communication products for Yahoo, told Fall VON 2005 Conference & Expo attendees.

Garlinghouse said customers could look forward to intelligent presence — smarts in the network that can decide where to try to reach a customer. Rather than a person being accessible or inaccessible, network intelligence could check customers' calendars, and if the network finds they are in a meeting away from any landline, ring their cell phones, he said.

Service elements could combine resources of more than one provider,

See Yahoo, page 42

# Governing the 'Net

**EYE ON THE CARRIER**

**Johna Till Johnson**

I got a lot of great feedback on my recent proposal to create an International Association of Networking Service Providers. Several folks requested an elaboration on the problems I'd briefly mentioned. Others wondered why I didn't feel the ITU or other organizations were up to the job. Finally, folks wondered why the "invisible hand" of the free market wouldn't serve to sort out everything in the long run.

All are great questions. Let's start with the first: Over the past several months, I've highlighted a number of unsolved policy issues.

For example, under what circumstances is it acceptable for carriers to censor content on their networks? The Recording Industry Association of America, for example, would love to make it illegal for a carrier to knowingly transport copyrighted material. But do we want carriers inspecting content at that level of detail?

Yet most agree that network-based security services are desirable — meaning carriers must determine which content represents spam, malware and distributed denial-of-service attacks. So perhaps the answer is "yes" — under certain conditions.

Finally, as noted earlier, several carriers have opted to filter VoIP traffic (other than their own) from their networks. Under what circumstances (if any) is that acceptable?

These questions are hardly hypothetical: EBay agreed to pay as much as $4 billion to acquire Skype, but China Telecom blocks Skype from its network for competitive reasons (see www.networkworld.com, DocFinder: 9027). Let's hope eBay wasn't planning to expand its audio auction services to China soon!

There's also the question of how carriers will respect each others' QoS designations. Right now, carriers' interconnect agreements are a patchwork quilt; there are no standardized terms and conditions for, say, MCI to carry AT&T's "top priority" traffic. More critically, there's no standardized marketplace, without which the free market's "invisible hand" can't operate.

Which brings me to the next point. The free market can't work in a vacuum. Specifically, any market requires a framework for setting and negotiating prices, unambiguous rules about how entities can solicit and receive bids, and a policing mechanism to minimize fraud. That's what the National Association of Securities Dealers provides for financial services, and what I'm thinking the IANSP could do for service providers — in addition to hammering out "rules of engagement" that would include generally accepted policies on issues such as traffic censorship.

Finally, there's the question of what's wrong with the existing bodies. The simple answer is there's no body that exclusively focuses on Internet policy and operational issues. Various organizations ranging from the Internet Corporation for Assigned Names and Numbers to the IETF to the FCC address some of these issues, but each does so under the umbrella of a larger, more general mandate. That's particularly true for the ITU, which I've been following for the past 20 years, and which has the broad mandate of "fostering and coordinating telecommunications initiatives."

Folks may be wondering where the impetus for such a body is likely to come from. If we haven't done it before, why bother now? That's for an upcoming column, but here's a hint: Who's got the greatest vested interest in effectively solving these problems?

*Johnson is president and chief research officer at Nemertes Research, an independent technology research firm. She can be reached at johna@nemertes.com.*

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## IMS

continued from page 41

from infrastructure makers, service providers and software vendors.

But the wide availability of SIP also could be the downfall of IMS, according to David Passmore, an analyst at Burton Group. Using enterprise communications gear or peer-to-peer software that uses SIP, both corporations and consumers could choose to handle their own voice or data sessions and get most of the capabilities of IMS. That would leave carriers in the role of selling pure high-speed IP connections, Passmore says.

"Long term, I'm not convinced that IMS is going to be successful," he says. "Ultimately, fat pipes may win out."

The complexity of IMS makes its road to deployment even steeper, he says, though the architecture can be boiled down to three basic parts. They are the Home Subscriber Server, which stores information about each user; application servers, which run the services that subscribers use; and the call session control function, which regulates how each session works and is merged with other sessions. SIP is the glue that holds all those elements together. The traditional circuit-switched telephone network can tie into IMS via gateways.

Companies could benefit from having all services handled on one architecture, according to analysts and others. One of the first windfalls is likely to be fixed-mobile convergence, providing an infrastructure for combination Wi-Fi/cell phones, Passmore says. IMS also would help to extend push-to-talk functions to more cellular networks.

In addition, more users could participate in a given application, such as videoconferencing, if it could be delivered to mobile devices and office PCs. Interoperability among service providers using IMS could bring in participants from parts of the company that use different carriers. And users could start multiple communications applications, such as text messaging, voice, file sharing and videoconferencing, from one software portal on a device, says Kevin Mitchell, an analyst of Infonetics Research.

That capability can already be set up in an enterprise or service provider network with Nortel's Multimedia Communications Server (MCS) products, according to Mike Doerk, senior manager of wireline marketing at Nortel. MCS will play the role of application server in a 3GPP-compliant Nortel IMS lineup coming in the fourth quarter, he says. Reaching beyond the 3GPP standard to bring IMS to all types of networks will take more work, but Doerk believes individual vendors will be able to build such systems within a year. Interoperability among different vendors' IMS platforms is perhaps a year or two away, he adds.

Nortel rival Cisco is committed to IMS in the long term but believes there are still issues to be worked out. The architecture as defined today isn't secure or scalable enough, says Art Feather, manager of architectures and standards for Cisco's mobile and wireless organization.

However, carriers are already working on IMS. Burton Group's Passmore says many contracts with vendors have been signed and initial deployments should come in 18 to 24 months, beginning in Europe.

SBC won't say when it will roll out IMS but is "deep in the throes of testing," says John Erickson, a vice president at SBC Labs. The architecture is intended mostly for voice services and will allow SBC to expand its VoIP offerings, but it could be used for data services, too, he says. One issue that still needs more work in standards bodies is how the IMS infrastructures of different carriers would interoperate, Erickson adds. ■

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## Yahoo

continued from page 41

Garlinghouse said. For instance, Yahoo plans next year to team with SBC to present SBC voice-mail as audio attachments to Yahoo e-mail.

Similarly, using BT's softphone, called Communicator, customers could see the identification of who is calling on the screen of a PC or smart phone, then have the option to route the call to another phone or voice mail, for example.

Soon to come are voice-triggered applications such as Yahoo Search. It would seek terms as spoken, so customers can perform hands-free Web searches and search from phones without having to use keystrokes, Garlinghouse said.

This last possibility requires an open VoIP platform, something that doesn't exist today between all carriers, he noted, so initially such services would have to be arranged carrier by carrier. ■

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## MCI

continued from page 41

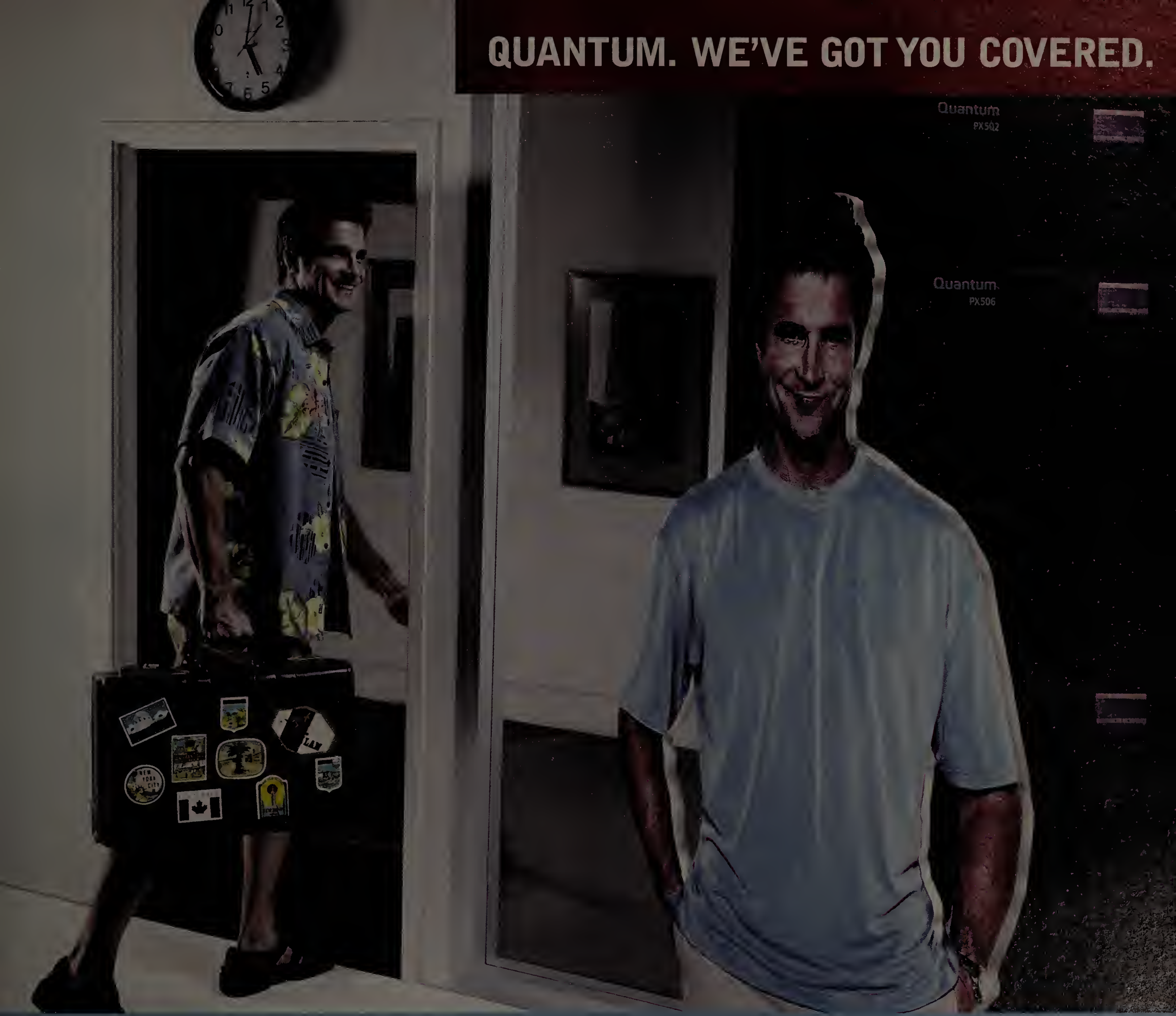
Gofus said MCI is working on interoperability between the Managed IP PBX and Hosted IP Centrex services, but doesn't anticipate any problems, because all are based on the same Cisco infrastructure.

Analysts also asked whether Verizon's acquisition of MCI, expected to be completed in 2006, will disrupt these investment plans. "We're working with Verizon, describing our portfolio and direction," Gofus said. "The message back is spend more, not less. This global portfolio is a great fit with Verizon's strengths."

Cisco Vice President of U.S. Channels Bob Gault was at the announcement to answer questions about Cisco's role in the service and said this isn't an exclusive deal. "We could strike deals with other big carriers, but we wouldn't want to pile on the channel," he said. "Other deals would have to be different in terms of the solution, the market segment, the vertical market served."

What Cisco really gets out of such deals is expanded reach. "We don't have as many account manages as carriers do." ■

➧ **Read our editorial about how VoIP came across at VON. Page 60.**



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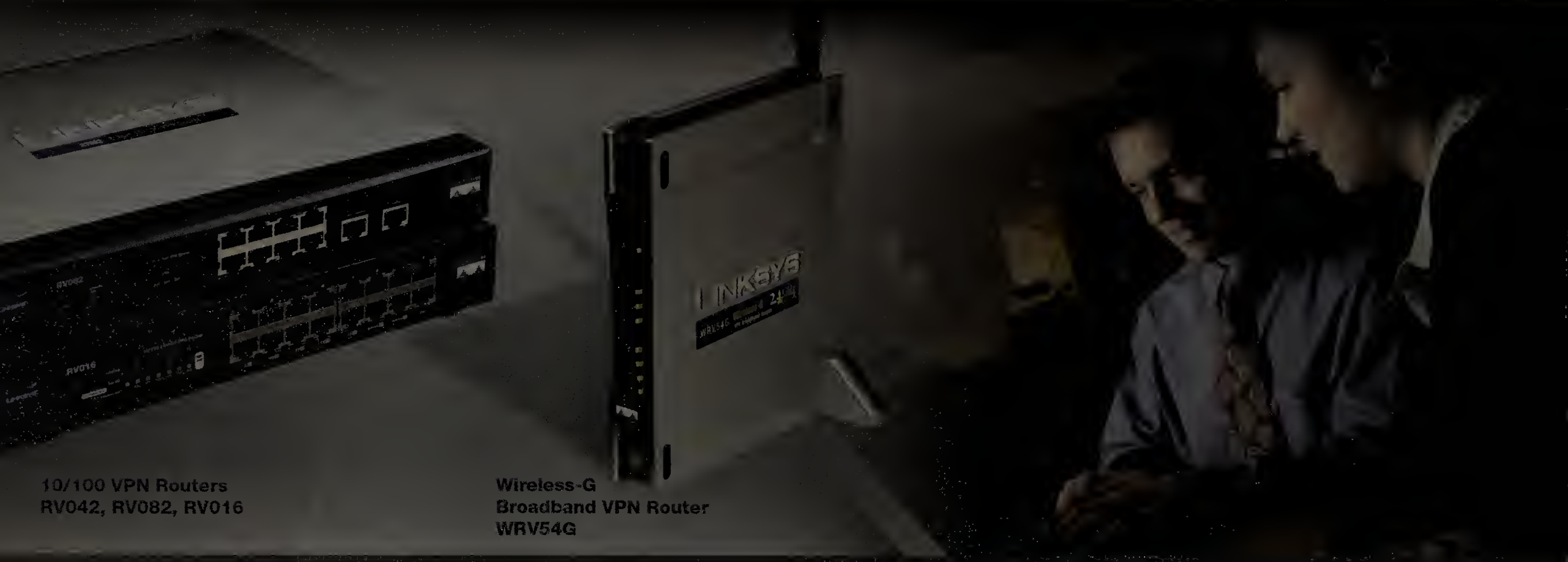

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# NET.WORKER

**PRODUCTS, SERVICES AND STRATEGIES FOR TYING TELEWORKERS TO THE ENTERPRISE**

# Teleworking takes off in Atlanta

Nonprofit groups create a telework start-up program loaded with incentives.

BY ANN BEDNARZ

A law firm, corrections department and manufacturing company are among 13 Atlanta employers to take part in a unique telework initiative that offered free consulting services and even reimbursed employers for certain funds spent getting their telework programs off the ground.

The group behind the initiative is Clean Air Campaign, a nonprofit organization that works with Georgia companies, government and schools to help reduce traffic congestion and improve air quality.

In its latest telework program, Clean Air Campaign provided participating companies with up to $10,000 in consulting services and up to $10,000 in reimbursement funds for staff time spent developing and implementing a telework pilot. In return, these companies had to commit to creating or expanding their telework programs.

Last month Clean Air Campaign announced the results of the program, which allowed each of the 13 participating companies to work with telework consultant Elham Shirazi to plan and implement a six-month telework pilot. As of July the program, called Telework Leadership Initiative, had spawned 1,800 new teleworkers in the Atlanta metropolitan area, Clean Air Campaign reports.

The group points out that employees aren't the only ones who benefit from teleworking. Employers, too, stand to gain — in particular when employees log extra hours of work time on days they telecommute.

Clean Air Campaign surveyed 13 participants and found teleworkers save an average of 107 minutes each day they telework by not commuting — and most often that time goes right back to the employer. More than 70% of respondents said they typically use the extra time to do more work.

"The findings from this survey really dispel the myth that telework is only a benefit to employees," said Ellen Macht, executive director of Clean Air Campaign, in a statement. "In each of the 13 pilot programs, the employer reported significant bottom line benefits, including increased productivity, improved morale and even savings on office space."

Among the program findings:

- Teleworking improves morale. Almost 90% of teleworkers reported improved morale because of teleworking, and 80% of managers agreed that staff morale was up as a result of teleworking. More than 65% of teleworkers said they're less likely to look for another job as long as they can telework, and more than 45% of managers said that teleworking gives the employer a competitive edge.
- Productivity doesn't suffer. More than 80% of workers reported no problems completing their work while teleworking, and 74% reported an increase in their productivity. On the managers' side, 85% reported that productivity increased (by an average of about 20%) or stayed the same. In addition, 91% of managers said that work quality was not hurt by teleworking, and 52% of managers said supervising teleworkers took no more time than supervising non-teleworkers.
- Technology is key. Participating companies invested or improved their computer technology, remote access and telephone systems. Companies with good remote access options found it easy to telecommute more often, according to Clean Air Campaign.
- Execution matters. Among the lessons participating companies learned is that telework training for employees and managers makes a difference, as does selecting the right employees for teleworking and having solid management approval. Formalizing existing programs lets organizations increase participation, the group says.

Perhaps the most telling finding is that all 13 participants plan to continue and expand their telework programs. Each manager, on average, plans to allow four more employees to telework. At current levels, these teleworkers will reduce more than 10 million vehicle miles from metropolitan Atlanta roads each year, Clean Air Campaign estimates.

**Improving morale**

**Almost 90%** of teleworkers reported improved morale because of teleworking, according to the Clean Air Campaign survey.

Consultant Shirazi says the Telework Leadership Initiative is the most successful telework pilot program she's seen in the U.S. She credits the success of the program to the resources participants received. "Much of the success is due to two things: providing a one-stop-shop approach for the creation of the programs, as well as the fact that there are better technology tools available — for less money — today," Shirazi said in a statement. ■

## Short Takes

■ **Qwest** and **Microsoft** last week said they would team to offer small and midsize businesses a managed suite of VoIP and messaging services. The services would integrate Microsoft's Solution for Enhanced VoIP services — which includes Exchange Server 2003, Office Live Communications Server 2005 and Windows SharePoint Services — with Qwest's OneFlex VoIP package that would offer e-mail, Internet access, collaboration, presence, instant messaging and desktop services. Qwest and Microsoft expect the service will be available in 2006. Qwest is the first service provider to integrate the Microsoft Solution for Enhanced VoIP Services.

■ **IBM** and **Oracle** last week announced they would integrate IBM's eServer platform with Oracle's JD Edwards EnterpriseOne and JD Edwards World to help small-business customers better manage their business applications. Specifically, Oracle will resell IBM's i5 520 servers with the JD Edwards software installed.

# Small businesses lack broadband options

BY GRANT GROSS, IDG NEWS SERVICE

More than three-quarters of U.S. small businesses in rural areas don't have access to cable-modem or DSL broadband Internet services, according to a survey released last week by satellite broadband provider Hughes Network Systems.

Forty-four percent of suburban small businesses don't have so-called terrestrial broadband services available, according to the survey conducted online by Survey.com. Sixty percent of the U.S. businesses with 10 employees or fewer surveyed said they didn't have access to cable or DSL. The survey covered 250 businesses with 100 employees or fewer.

Thirty-five percent of urban small businesses surveyed said they do not have access to terrestrial broadband.

The study shows the need for more education about the benefits of broadband and about alternatives to fixed-line broadband services, said speakers at a Washington, D.C., rural broadband forum, sponsored by Hughes.

The Hughes survey would seem to contradict statistics from the FCC, which said in July that 95% of U.S. ZIP codes have access to at least one broadband provider. But critics of the FCC statistics say broadband services may not cover all areas of a single ZIP code, and satellite companies may also be the lone providers in some of those ZIP codes, adds Michael Cook, senior vice president at Hughes.

Many small-business owners don't know about the availability of satellite broadband, and some may not see the benefits of paying for broadband, Cook says. "What if you're in business and you want to download a parts catalog because you're fixing someone's car?" he says. "Then you try to download a parts catalog on a dial-up modem."

Broadband services are particularly important to rural areas that may not have the education or healthcare facilities that urban centers do, adds John Branscome, acting legal adviser for wireless, technology and international issues at the FCC. Broadband "has the power to make geographic isolation irrelevant," Branscome says. ■

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# TECHNOLOGY UPDATE

■ AN INSIDE LOOK AT TECHNOLOGIES AND STANDARDS

## WMM addresses quality of service

The Wi-Fi Alliance provides prioritization of data packets to clear the way on wireless networks.

**BY BEN GUDERIAN**

As audio, video and voice applications proliferate on wireless networks, quality-of-service mechanisms are needed to make sure applications with low tolerance for latency and jitter are treated with higher priority than less-sensitive data applications. QoS is critical because wireless LANs have less bandwidth and are less tolerant of packet collisions than wired LANs.

The IEEE is finalizing a wireless QoS standard, 802.11e, that is expected to be approved this year. Eager to spur interoperable QoS among different vendors' wireless gear, the Wi-Fi Alliance developed a subset of 802.11e called the Wi-Fi Multimedia (WMM) specification. Makers of wireless access points as well as wireless client devices such as laptops, phones and consumer electronics products are incorporating support for WMM into their wares.

WMM is designed to support consumer and corporate applications and works with all three 802.11 wireless physical layer standards — 802.11a, 802.11b and 802.11g. The specification provides basic prioritization of data packets based on four categories — voice, video, best effort and background. In its current form, WMM doesn't provide mechanisms for scheduling or controlling network access to improve QoS, but these enhancements may be added in future releases.

Prioritization is based on the original Carrier Sense Multiple Access/Collision Avoidance Protocol in the initial 802.11 standard. A mechanism called Distributed Coordination Function (DCF) uses a simple listen-before-talk algorithm to minimize the chance of packet collisions caused by more than one device accessing the wireless medium at the same time. A client must wait for a randomly selected time period and then "listen" to find whether any other device is communicating before starting to transmit. The random back-off period gives all devices a fair opportunity to transmit.

However, WMM stipulates different fixed and random wait times for the four prioritization categories to provide more favorable network access for applications that are less tolerant of packet delays. Devices that have less time to wait have a better chance of being able to transmit than those that have a longer wait. In order of highest priority, the access categories are voice, video, best effort and background. These WMM prioritization categories map to Ethernet 802.1d prioritization tags to allow consistent QoS across wireless and wired network segments.

The back-off timing for each access category consists of a fixed period called the Arbitrary Inter-Frame Space Number followed by a random period called the Contention Window (CW), both specified in multiples of the slot time (see graphic). For 802.11b, one slot is 20 microsec and for 802.11a and 802.11g, a slot is 9 microsec. The CW maintains the DCF random back-off component to help avoid collisions of packets from the same access category. The CW range doubles each time there is a collision and is reset to its minimum value after a successful transmission.

WMM prioritization achieves the goal of minimizing delay in wireless networks for time-sensitive applications. The ability to use wireless networks for data, voice and multimedia applications will continue to drive widespread adoption.

*Guderian is vice president of Market Strategies and Industry Relations for SpectraLink. He can be reached at bguderian@spectralink.com.*

### HOW IT WORKS: WMM

The Wi-Fi Multimedia specification provides QoS for wireless applications by defining prioritization categories that have different fixed and random wait times for sending traffic. The fixed period is called the Arbitrary Inter-frame Space Number (AIFSN) and the random period is called the Contention Window. Both are specified in multiples of "slot" time.

| Category | AIFSN | Contention Window | Total initial wait time |
|---|---|---|---|
| Voice priority (7,6) | 2 slots | 0 – 3 slots | 2 – 5 slots |
| Video priority (5,4) | 2 slots | 0 – 7 slots | 2 – 9 slots |
| Best effort priority (0,3) | 3 slots | 0 – 15 slots | 3 – 18 slots |
| Background priority (2,1) | 7 slots | 0 – 15 slots | 7 – 22 slots |

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### Got great ideas?

■ *Network World* is looking for great ideas for future Tech Updates. If you've got one, and want to contribute it to a future issue, contact Senior Managing Editor, Features **Amy Schurr (aschurr@nww.com).**

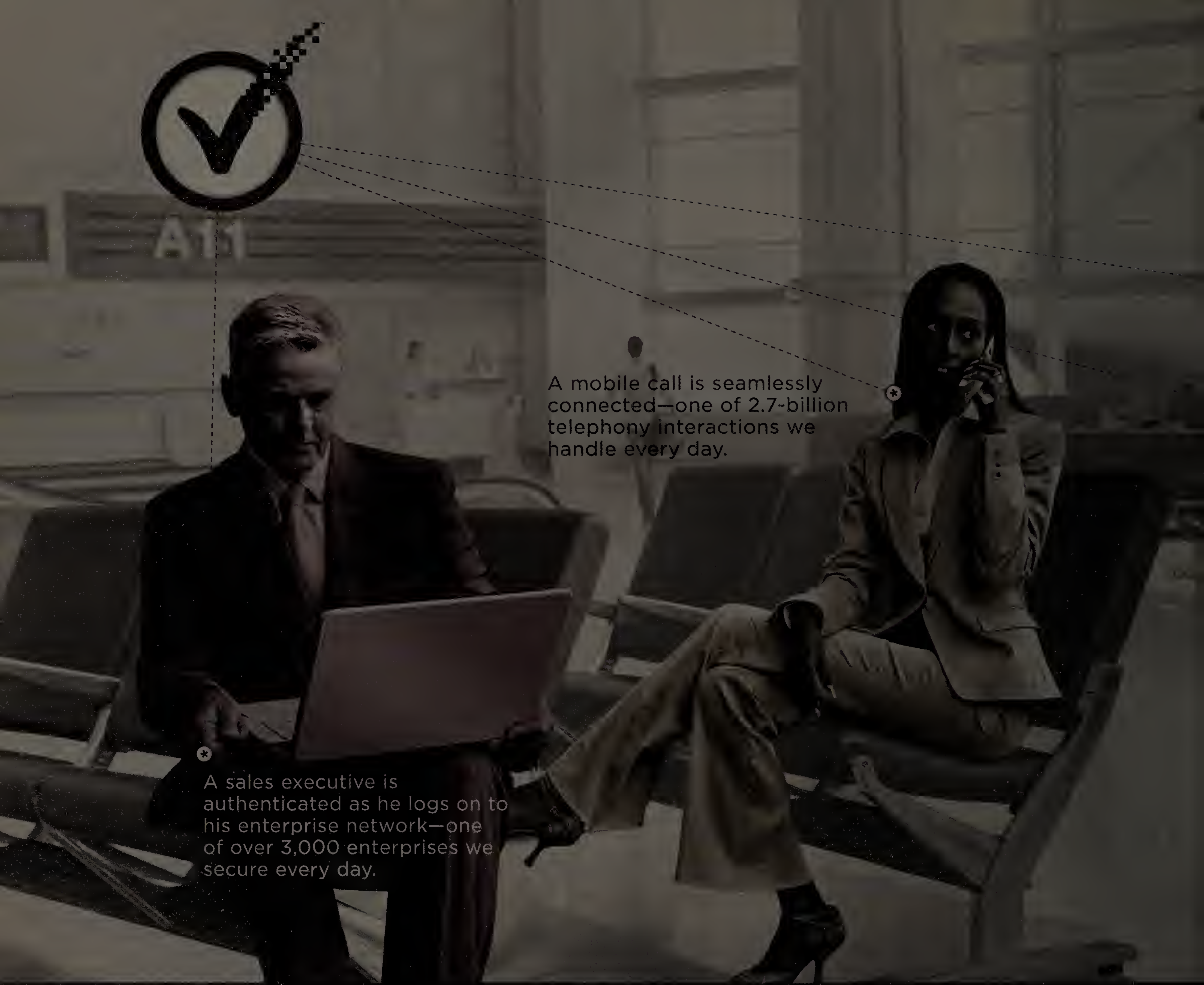
## Ask Dr. Internet

**By Steve Blass**

**Where can I find Linux hardware drivers for my USB wireless network adapter?**

Linux driver information for Atmel AT76C503A-based wireless USB devices can be found at www.networkworld.com, DocFinder: 9029. Drivers and installation information for Prism2 devices such as the Linksys WUSB11 adapter is available from DocFinder: 9030. The www.linux-wlan.org site provides driver software and Linux compatibility information for a number of USB and PC Card wireless network devices. One of the best places to start searching for drivers for a particular USB device is the Linux Wireless LAN HowTo document available online at DocFinder: 9031. While some of the information may be a bit dated, you can find information on Linux wireless drivers ranging from pre-802.11 standards up through more recent 802.11g and 802.11a devices. If you still cannot find an open source hardware driver for your USB wireless network device you might look at the DriverLoader offering from www.linuxant.com. DriverLoader delivers a compatibility-wrapper designed to enable the use of standard Windows NDIS drivers on Linux systems. A free 30-day DriverLoader trial is available for download and the permanent license price is low enough to be quite attractive if DriverLoader works with your current USB device. Installation is straightforward, but you do need a copy of the Windows drivers for your device. To use Wi-Fi Protected Access security with DriverLoader, you need to download and install a second package named wpa_supplicant from the Linuxant download site.

*Blass, a network architect at Change@Work in Houston, can be reached at dr.internet@changeatwork.com.*



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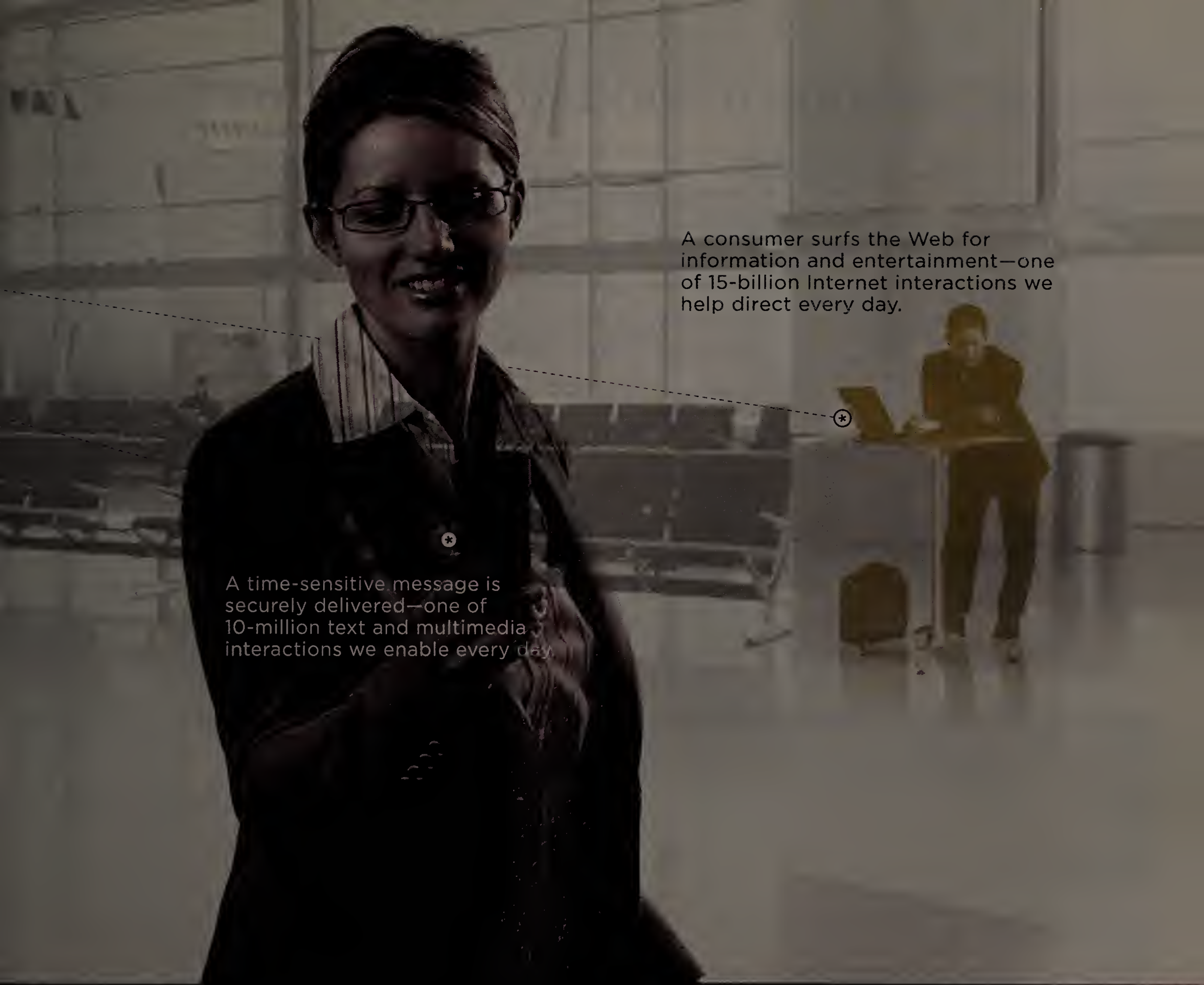

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**GEARHEAD**
INSIDE THE NETWORK MACHINE
**Mark Gibbs**

# Reviewing a handful of USB drives

We just got some crazy pictures from DriveSavers, specialists in recovering data from drives that have been squashed, crushed, burned, soaked or otherwise abused. To support victims of Hurricane Katrina, DriveSavers has reduced its fees for anyone involved in the flood who needs to recover data. The photos from some of these recoveries are pretty amazing. Drop us a note to gearhead@gibbs.com with the subject of "drivesavers," and we'll send the pictures to you.

Anyway, our topic this week is USB drives. Curiously, pretty much every vendor of USB drives provides lanyards so you can hang your USB drive around your neck. This is a great way to emphasize your geekness — to complement your cell phone holster on your hip, iPod (a nano, one hopes) on your other hip, the white earbud headphone cable draped across your shirt, laptop in one hand, and a CrackBerry and a diet soda in the other.

Of course, should you bend down in the middle of the office to check a cable or something and spill your soda, you'll probably drop the CrackBerry into the spill. You go to grab that only to send your iPod flying, but because it is tethered to your ears, it swings around in an arc and smacks you sharply in the nose starting a nosebleed. This makes you reach for the nearest tissue box with the other hand, and you snag your cell phone on your cuff and send it flying into the next cubicle, where it destroys the monitor of a senior programmer, ultimately causing a two-month delay in shipping the next release. But you can rest easy because you have that drive on that lanyard and at least you will have something to hang yourself with.

We just got in a batch of USB drives, and we're impressed. They are becoming really impressive in terms of capacity and the sophistication of value-added features, not to mention that the prices are plummeting. We figure they now average around 10 cents per megabyte compared with, for example, 17 cents per megabyte for floppy disks.

> DriveSavers has reduced its fees for anyone involved in the flood.

All of the drives are USB 2.0 compatible and rated at around 1 million write cycles, after which they explode. Just kidding.

Anyway, for some background on USB drive technology, we point you to an interesting albeit slightly old story on Ars Technica (www.networkworld.com, DocFinder: 9032) and in particular their tests on the performance of USB drives (DocFinder: 9033).

In our batch of drives we got a couple that are storage only: The SimpleTech Bonzai Xpress USB 2.0 Flash Drive (DocFinder: 9034) comes in a curvy package with a tiny write-protect switch on the side and a discrete green light on the top to indicate when the drive is in use. This snazzy drive is available in capacities ranging from 128M bytes (as low as $17) up to 2G bytes (around $140).

SimpleTech also sent us the Bonzai USB 2.0 Upgradeable Flash Drive, which is really a holder for Secure Digital or Multi Media Card flash memory cards. The holder without a card is priced around $8, while one with a 1G-byte Secure Digital card costs around $91.

Verbatim's Store 'n' Go USB Drive and Kingston's DataTraveler Elite drive come with what appears to be the same software but with a branded user interface for each vendor. The software provided on the drive consists of a user-driven (as opposed to automatic) data synchronization manager (Verbatim's V-Key, Kingston's MyTraveler) and a partition manager (Verbatim's V-Safe, Kingston's TravelSafe+) to divide the drive into public and password protected and encrypted private areas.

The software in both cases is perhaps a little simplistic, but used routinely by your mobile users it will surely reduce those panic calls. Even if you can't get them to be smart about using the drives for backup, they are a great way to distribute software, patches and content securely.

Verbatim's Store 'n' Go USB drives range from 128M bytes (from around $19) to 2G bytes (as low as $142), while the DataTraveler Elite range starts at 256M bytes (from $39) to 4G bytes (about $360).

*Drive your thoughts to gearhead@gibbs.com. As always, check Gearblog (www.networkworld.com/weblogs/gearblog).*

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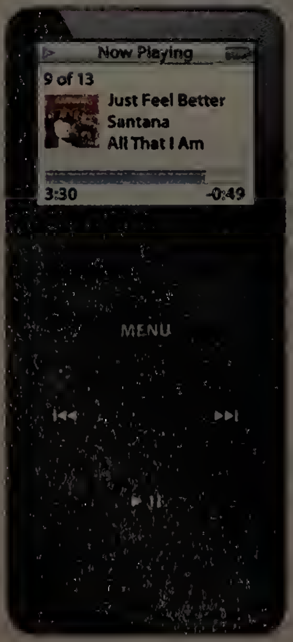
# CoolTools

Quick takes on high-tech toys. **Keith Shaw**

**The scoop:** iPod nano, by Apple, about $250 for 4G-byte model, 2G-byte model costs about $200.



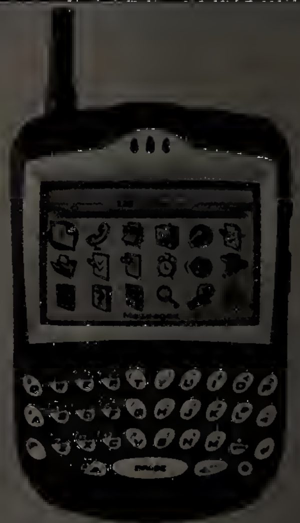
**The iPod nano is thinner than a pen and plays more than 1,000 songs.**

**What it is:** The latest iPod digital audio player from Apple, the iPod nano is a teeny tiny (that's a technical term) version of its more famous cousins, but about half the size and weight (1.5 ounces). The 4G-byte version can hold about 1,000 songs (we got 1,036 on ours and still had space left for more songs) and features a small color screen that shows items such as the song's album cover. In addition to playing songs, the device can display a user's digital photos, making it more than just a music player. The nano includes the same 30-pin dock connector as the newer iPods and iPod mini devices, which allows use of those accessories for the new device (via a dock adapter). The nano connects to a Mac or PC through a USB 2.0 cable, which also acts as the device's charger (if you don't have a charger from an older iPod).

**Why it's cool:** The size of the nano needs to be physically seen to be believed — looking at a picture of it doesn't do it justice. The nano is about half the width of a regular iPod, and thinner than a regular pen or pencil. In terms of features, Apple's Click Wheel technology continues to impress in terms of navigating through your list of songs and playlists. I also enjoyed discovering the extra applications that Apple has put on the device, including a new stopwatch application (good for tracking laps when working out) and world clock. I'm not sure if this game is on other iPods, but there's a music quiz that plays small clips from your song collection and offers you a multiple-choice quiz to see if you can identify them.

**Some caveats:** Because the nano is so small that you can easily fit it into a shirt, coat or pants pocket, it becomes much easier to lose. Also, having to charge the device through a USB cable became a slight annoyance, requiring us to charge via our laptop when traveling (the regular iTunes application and songs are stored on a home desktop PC). But I was willing to put up with these small annoyances for the amazing benefits of having a teeny tiny music player from Apple.

Grade: ★ ★ ★ ★ ★(out of five)



**BlackBerry adds GPS navigation features, including driving directions.**

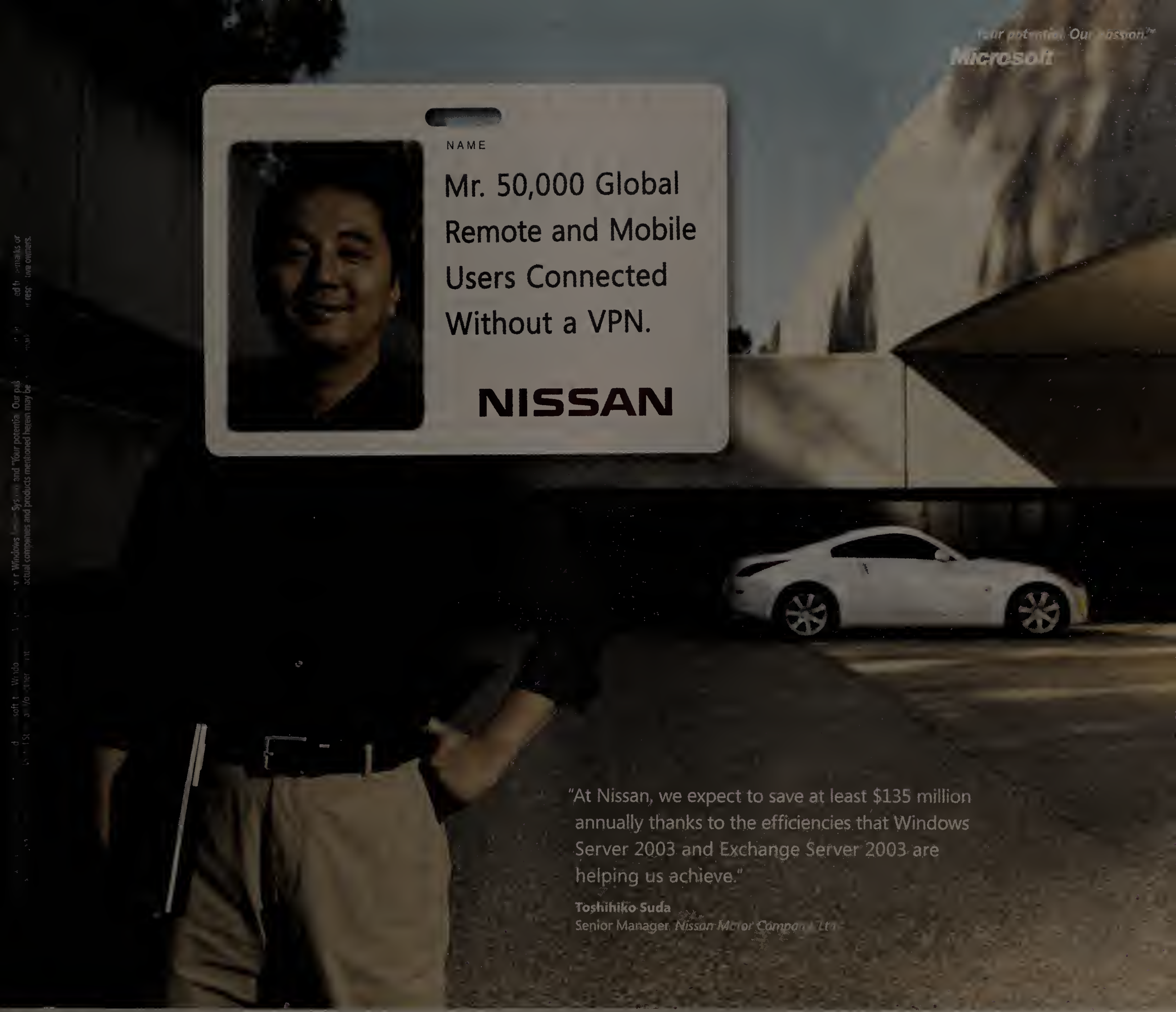
**The scoop:** BlackBerry 7520, from Sprint (Nextel) and Research In Motion, about $200 (with rebates and two-year activation, otherwise $450).

**What it is:** The only BlackBerry device with GPS navigation features, the 7520 from Sprint Nextel includes Nextel's Direct Connect walkie-talkie, Bluetooth for wireless headsets, the ability to view and store image files (including JPG and TIF), and increased memory (32M bytes of flash memory plus 4M bytes of static RAM for storing data and applications).

**Why it's cool:** The 7520 isn't exactly a new device (it launched in December), but we hadn't played with a BlackBerry in a while and wanted to try out the GPS functionality. RIM and Nextel provided us with a version of the TeleNav application, which offers driving directions and other maps based on your current location for an extra $10 per month. It was cool to have the driving directions application bundled along with my wireless e-mail and cell phone device, making it a truly converged device for users who want these features.

Grade: ★ ★ ★ ★

*Shaw can be reached at kshaw@nww.com.*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# Slimming and Toning NETWORK PRINTING

***Enterprises find ways to reduce TCO by getting network printing in shape.***

BY ROSEANN MCGRATH BROOKS

**How long would it take** for you to print 100,000 forms in-house? Which printer do you use to print Microsoft Excel charts and graphs? What are your monthly costs for ink cartridges and paper? How many personal printers does your company own? How much time does IT spend on break and fix for printers?

As IT budgets get squeezed, CFOs are beginning to take a peek at the printing scale to weigh total cost of ownership (TCO) for network printing. "Network printing management is not as sexy as a major CRM [customer relationship management] implementation," observes Riley McNulty, research manager with the Imaging and Output Group at industry research firm IDC, Framingham, Mass. "But it's a real day-to-day need."

Improving TCO of network printing requires assessing printing statistics, managing your network proactively, and making informed purchasing decisions.

## What do you print?

Ask any CFO about costs for servers, desktops, remote connectivity, and other IT expenditures, and that top finance executive can rattle off key numbers. Costs of printing, however, are more nebulous.

"Companies can be blind to how much they spend on network printing because the supplies and per-page costs are typically associated with different departmental budgets," says Mike Pietrunti, senior vice president of marketing and technology services at document imaging company Kyocera Mita America, Fairfield, N.J. "The CFO doesn't always see the breakdown of what those departments are spending on things like ink cartridges."

So the first step toward improved TCO is to assess what you're spending on what you have. Today, many printer vendors and outsourcing providers offer services to determine the costs of an enterprise's current network printing environment through metrics such as pages per minute, page volume per month, supply refills, number of devices per user, and so on (see sidebar, "Deriving TCO").

"You need to determine where your printers are located and whether they are being used appropriately," says Peter J. Grant, research vice president for industry watcher Gartner Inc., Stamford, Conn. Where are your networked monochrome printers? Which groups are using the color printers? How well are you using multifunction peripherals (MFPs) that fax, copy, and scan, as well as print?

Gartner estimates that output assessment tools can lower output costs by as much as 40 percent. "Assessing your network and rerouting documents to more efficient printers reduces spend, improves productivity, and increases efficiency, especially in the area of speed," says Grant. "Upgrading printers can also eliminate bottlenecks and improve diagnostics."

Take Charlotte, N.C.-based Bank of America, for example. With help from Gartner, the financial services giant determined that 70 percent of its printing was being done on the most expensive devices on its network and that only 5 percent of its MFPs were network-connected.

Gartner helped Bank of America reduce its high TCO by limiting hardware vendors to three; providing color printers to only those groups that can justify it; and connecting all printers and MFPs to the network to be monitored by tracking tools. This has resulted in estimated savings of $7 million in 12 months. Part of that savings comes from an increased device-to-user ratio, from one printer for every two users to one printer for every seven users. Grant points out that some companies that have simple printing needs can reduce that ratio to 1-to-20.

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# Long on Reliability, Short on Costs

***Kyocera's industry-lowest TCO leads to huge IRS contract and independent accolades.***

Smart technology buyers generally put value and reliability at the top of their lists of product criteria. The more reliable the product, the more continuous service it delivers. This in turn elevates productivity and delivers real long-term value by way of lowering total cost of ownership, or TCO.

This is certainly what one of the world's biggest buyers had in mind recently when it awarded Kyocera Mita America a contract to provide 3,400 printers to offices throughout the United States. This buyer, the Internal Revenue Service (IRS), cited Kyocera's industry-leading lowest TCO as a main selection criterion for a contract forecast to save taxpayers millions of dollars over the printers' lives compared with other printer choices.

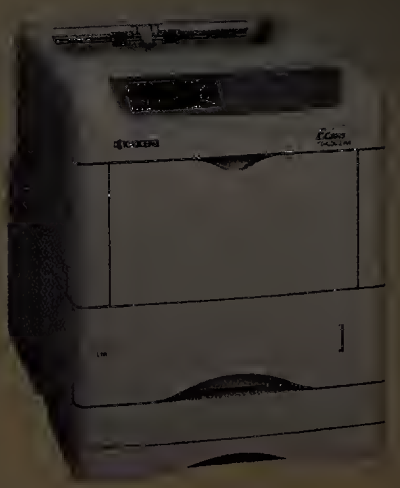
KYOCERA

"We recognized that the IRS had a significant opportunity to save money and make more informed printer purchasing decisions," says the IRS' Russell Critterton. "The deciding factor was the total cost of ownership of the devices. Once we saw how well Kyocera's printers held up in our tests and the cost savings over the life cycle of each model, the decision was easy."

## Reliability and productivity

Independent research and surveys on product quality and reliability back up the wisdom of the IRS' decision. Recently Industry Analysts Inc., a consulting company specializing in office technology, honored Kyocera Mita America for selling the most reliable copiers and multifunction printers. Earlier this year, BERTL, a source for independent technology evaluations, recognized Kyocera Mita America for the Most Reliable Monochrome Printer and Multifunctional Line in the world. BERTL also gave Kyocera Mita America a Gold Award for overall device productivity.

And data validated by Current Analysis, an independent market intelligence firm, shows that Kyocera printers offer IT buyers a TCO up to 50 percent less than that of comparable products. Potential buyers can view the results themselves by using the Kyocera "TCO Tracker" at the company's Web site. The TCO Tracker utilizes third-party research and analysis* to help CFOs track long-term printer spending.



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## Proactive management

Monitoring your network leads to better management of that network. According to Grant, Bank of America created a document management department that oversees all network printing needs, as well as needs for other output devices, such as those for copying and faxing. Gartner even advises that enterprises create an output "czar," a person who can address management issues—including rightsizing, outsourcing, document workflow, supplies, and general maintenance—in a proactive, ongoing process.

IDC's McNulty agrees that proactive management is key. When a printer goes down or a department increases its printing output, many IT groups handle those issues reactively, he points out. This can delay IT response time, reduce worker productivity, and take resources away from more business-related IT projects. Knowing in advance what is happening can help IT stay on top of network printing needs.

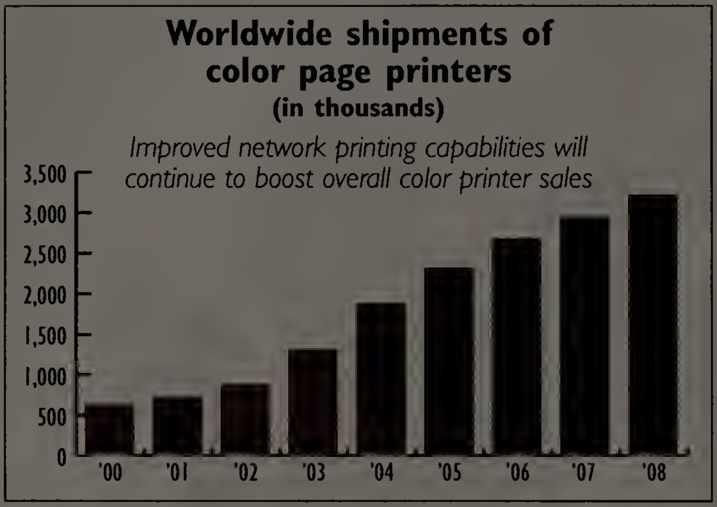
Most printer vendors bundle management tools with printer hardware, and some free management tools are available on the Web, such as Web Jetadmin from HP and CentreWare from Xerox. Most tools support SNMP-compliant printers and MFPs. They enable advanced remote management capabilities to set up devices, collect data, perform batch management, conduct diagnostics, organize devices, and send alerts about such information as the need for new firmware or ink.

### > > > Five Reasons to Upgrade < < <

Experts advise companies to upgrade printers every five to seven years. Peter J. Grant, research vice president for Gartner Inc., points out that one best practice is to link your printing life cycles to desktop life cycles. Consider replacing a percentage of your printing fleets each year.

Here's what to evaluate to determine upgrade needs:

1. The old printer is failing, which increases maintenance costs.
2. The new printer is faster, enabling lower cost per page and improving productivity.
3. The new printer requires less expensive supplies.
4. The new printer belongs to an approved vendor list, enabling economies of purchasing scale.
5. The new printer has features that the networked group needs: color, improved diagnostics, security, or multiple functions such as copying and scanning capabilities.



**Worldwide shipments of color page printers (in thousands)**

*Improved network printing capabilities will continue to boost overall color printer sales*

Source: IDC

Many providers offer outsourcing of proactive printer management. "Because printer hardware and channel vendors want to deepen their relationships with companies, many offer break-fix and other outsourcing services," explains McNulty. "Outsourced maintenance can reduce IT headaches and improve response time."

But it's not necessarily about tools and service. "Printing issues are not so much technical issues as business issues," says Kevin Freeman, manager of technology services at Commonwealth Financial Network, Waltham, Mass, and San Diego. Commonwealth has one central group that handles the printing infrastructure, monitoring print queues and printer needs through a central network print monitor. This enables the second-largest, privately held independent financial broker/dealer in the United States to assign new printers through a group policy and to discover when there is a backlog and when a certain printer needs toner. The company also strives to address output needs by examining business processes that can handle documents electronically, instead of via print.

"Important savings can come from workflow improvements," says IDC's McNulty. Copies of documents stored electronically on servers, instead of printed out, can reduce output costs as well as help with compliance to privacy regulations such as the Health Insurance Portability and Accountability Act (HIPAA). In addition, servers can store electronic forms, which eliminate preprinted forms.

## Wise shopping

Knowing what you need and managing what you have must be supported by "competitive purchasing," says Gartner's Grant. He advises companies to reduce their number of printer vendors, which enables organizations to bargain for competitive pricing and take advantage of economies of scale.

In addition, experts recommend that you weigh both hardware and supply costs. "Don't just take

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# Crowning Achievement

***Sharp's Digital Imager line sets standard for IT friendliness.***

**SHARP**

It's one thing for a vendor to crow about the quality and value of its products. It's quite another when the leading source for independent, unbiased intelligence on IT imaging products tags an entire product line with its coveted "Pick Of The Year" award for its capability to "make an IT manager's job easier."

Thus Buyers Laboratory Inc. (BLI) this past July recognized the Digital Imager product line from Sharp Electronics Corp. for "outstanding achievement for IT friendliness," based on exhaustive tests for overall durability that take up to two months to complete. After all, the more durable the imaging solution, the fewer the service calls and therefore the lower the solution's overall total cost of ownership.

In summarizing this prestigious award, BLI lauded the Imager line's "highly automated setup procedures, robust administrative utilities ... and an impressive offering of standard and optional security capabilities."

As a veritable benchmark for the imaging industry, the Imager line offers Print Queue Management (PQM). This user-friendly feature allows users to proportionally split large print jobs over several devices on the network, making maximum use of the network's full printing capacity. In this way PQM takes care of the peaks in printing demand with minimal hardware investment.

## Network printing made easy

Sharp's innovative EZ Cluster Manager Utility optimizes overall output performance by creating a cluster of networked Imagers and then apportioning print jobs across the devices in the cluster. This utility can also automatically route print jobs among a pool of printers in case the preferred printer is offline.

The Imager's Administration Utility Suite greatly simplifies the installation, monitoring, and use of the Imager device as both a network printer and a multifunction product. And Sharp's Security Suite solution delivers maximum protection against unauthorized access to a company's most sensitive documents, assuring confidentiality on a selective basis for documents that are printed, copied, or scanned.

The bottom line is that the independently touted Sharp Digital Imager series of multifunction solutions delivers unparalleled flexibility and productivity, cleverly complementing the hardware with software solutions for the ultimate in network printing.

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into account the initial low price of a printer," says Kyocera's Pietrunti. "The high prices of the consumables could make long-term TCO very significant."

Commonwealth's Freeman agrees: "One way to reduce costs is to determine if there is a reliable alternative source for supplies, such as discount printer cartridges or refill kits."

As for types of printers, don't be afraid to buy color, as color printers are becoming faster and more affordable. "Just make sure you manage who is using color and when," says Gartner's Grant. "Implement policies for printing to the color printer."

MFPs are also an option. Today's MFPs can print 20 to 30 pages per minute and are functioning as workgroup printers, fax machines, copiers, ad-hoc scanners, and so forth. Although experts advise users not to overbuy MFPs, these multifunction products can help reduce the cost of overall output by consolidating several functions on one machine. "MFPs help you leverage the appropriate asset for the need," says IDC's McNulty. For example, MFPs have advanced finishing capabilities that certain departments may desire.

Finally, you may want a printer vendor that specializes in your vertical market, such as government or health care, or that offers leasing plans that include maintenance. And Kyocera's Pietrunti advocates looking for a vendor that will allow you to test-drive new printers to determine if your predicted costs and assessed savings are real.

## > > > Wireless Network Printing < < <

The success of 802.11 devices has made wireless printing more popular, and the U.S. wireless printing market is expected to grow at a 26 percent compound annual growth rate, according to IDC. However, the use of wireless in network printing environments is still mostly confined to personal, home office, and small-business users, with very limited enterprise use, say experts.

Most organizations already have network plug-and-play ports for the rest of their network, so using wired networks for printing still makes the most sense. In addition, "there are big security issues with wireless," says Riley McNulty, research manager with the Imaging and Output Group at IDC. "IT has to be concerned about the security of their firewall."

"Enterprises tend to use wireless network printing only for mobile workers," agrees Peter J. Grant, research vice president for Gartner Inc. "Warehouses and schools also use wireless network printing where they need shared printers and you can move the printer around."

## > > > Deriving TCO < < <

To improve TCO, start with understanding the basic numbers. Here are some statistics you and your service provider need to examine.

- Cost of each printer unit
- Volume of pages printed on each printer
- Cost of consumables, such as toner
- Speed of printer
- Number of people using the printer
- Number of people who need color printing capabilities
- Number of people who need specific functionality, such as security or large printer-tray capacity

## Winning printer culture wars

Workers like to control their own printers, but enterprises can help make users more amenable to network printing by explaining the benefits. "There's a human element to all this," says IDC's McNulty. "Management needs to supply good reasons about containing costs and volume if they want users to comply."

The first step is to make sure the mandate for network printing comes from the executive suite. "The CFO needs to be part of the buying cycle," says Kyocera's Pietrunti. "Top management must be committed to rightsizing the network printing environment."

Another way to convince users of the need to improve network printing strategies is to bill departments for pages they print, says Gartner's Grant. Both the departments and the money crunchers will begin to see how much they are printing and how a network printer can reduce those costs. "Network printing becomes an easier answer when users realize that a personal printer can mean a two to seven times higher cost per page," explains Grant.

Confidentiality and security used to be deciding factors in allowing employees to keep personal printers. Today's printers eliminate that argument. "With security features, print drivers can give users a personal identification number [PIN]," Grant explains. "The user can tell the printer to hold the print job until he or she physically goes to the printer and enters that PIN, assuring confidentiality." ■

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*Roseann McGrath Brooks is a freelance writer based in West Chester, Pa., specializing in business and technology.*

# A Great
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***Network printer and multifunction solutions from Brother hit the business sweet spots.***

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Another key advantage is that a number of Brother products share the same supplies, making it easier to manage office equipment supply needs. For example, both the award-winning laser five-in-one MFC-8840DN multifunction machine and the HL-5170DN laser printer for small connected workgroups share the same toner and drum unit. The result is an easier-to-manage printing environment that can deliver a lower total cost of ownership over the life of both machines.

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Brother also offers an array of tools that clear the way for smooth system administration while ensuring that Brother printers and multifunction machines are operating at peak performance. Among these are BRAdmin Professional for managing printers and multifunction devices in a workgroup environment, and Web BRAdmin, which is ideal for managing Brother products across the enterprise.

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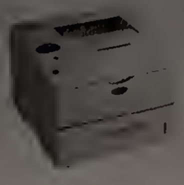
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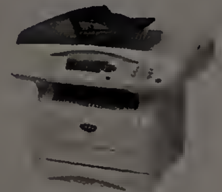
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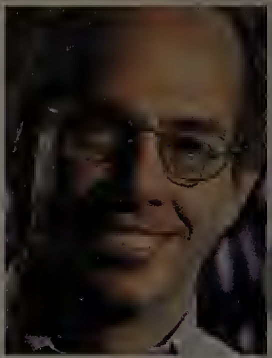

On Technology

John Dix

# VoIP: The next generation

Many speakers at the VON conference in Boston last week talked about what one called VoIP 2.0. If VoIP 1.0 was all about inexpensive calls, 2.0 is about integration and new applications, said Brad Garlinghouse, vice president of communications products at Yahoo.

"VoIP by itself isn't it," he said. "It's all about new functionality." By way of example, he cited a capability Yahoo supports in the U.K. through a deal with BT. When customers are in the office they can have calls to their home sound an alert at work, and they can either answer, block or route the calls.

Consumers are ready for 2.0, he said, noting how advances have actually complicated their lives. "People have voice mail at home, in the office, on their cell phones and then multiple types of e-mail. We need to break down barriers and integrate these environments," he said. (For more on Yahoo, see story in Service Providers section, page 41.)

Skype CEO and co-founder Niklas Zennström agrees that the future is about new options. He said the first two years for his firm were "all about people communicating with each other. Now it is about people communicating with services."

He can imagine, for example, Skype making it possible for a businessman in China to contact a colleague in Germany and, on the fly, arranging for a translator to join the conversation for a fee. As part of eBay now, Skype has access to eBay's PayPal business unit that will make it easier for this type of thing happen.

Zennström points out that there are 400 products built to the Skype API today and some 1,000 developers building to Skype.

Blair Levin, managing director of Legg Mason, said players such as Skype, Yahoo and Google are innovating faster than legacy telco players. The latter, he said, have a lot more to lose than to gain.

But BellSouth CTO Bill Smith told the VON crowd that VoIP is one of four key BellSouth initiatives, the others being building out broadband, integrating wireline/wireless and deploying IPTV.

Why VoIP? Smith echoes the others: new features. "The old world was defined by 12 buttons and a switch hook," he said. "The sky's the limit in the new world. I should be able to use my cell phone to call up my personal video recorder and program it to record something. That's possible today but clunky. It should be simple."

Add to that the fact that this new world promises big savings. Smith said a pure IP-based network would "take several hundred million dollars per year of cost out of our net. Maybe $1 billion per year. We could get rid of all of those expensive Class 5 switches."

That's even more compelling than new applications.

— John Dix
Editor in chief
*jdix@nww.com*

# Opinions

## MPLS worth a look

Regarding Johna Till Johnson's column "Let's talk about packets, purists and paradigms" (www.networkworld.com, DocFinder: 9023): To the purist: Get over being a control freak and try MPLS. You will be amazed at how much of an improvement MPLS QoS can make on narrow-bandwidth connections.

My company runs a geographically diverse network of nursing homes and other services wherein each location typically gets 128K bit/sec port with a committed information rate of 64K bit/sec on a fractional T-1. These locations can have as many as 22 computers accessing applications via Citrix, which is a lot of computers for that small amount of bandwidth. We had chronic speed issues at these sites and had tried implementing QoS on the routers, but this did nothing to resolve the problem, since the telco network didn't know the QoS policies. When we made the change to MPLS, one of our more vocal locations immediately did back flips. The location manager described the change as making the network run like "a top-fuel funny car."

In my humble opinion, the only way to make QoS truly work is to have the telco working in conjunction with the routers to tag and deliver packets based on your QoS policies. Our network engineering group has repeatedly described it as the best thing they have ever done to help the company. Our only regret is not doing it sooner.

Tom Franciosi
Orlando, Fla.

## Concerns about China

Regarding Linda Musthaler's column "Reconsidering the IBM-Lenovo deal" (DocFinder: 9024): I'm still very uncomfortable with the technological and economic implications of anything we do with the Chinese government. I think it's great China is opening up to free enterprise, although somewhat still controlled by the central government. My concern is twofold. First, the IBM technology is high-end compared with most PCs today. This technology would undoubtedly be used by the Chinese military, which has a large arsenal of nuclear weapons aimed at the U.S. Are we literally shooting ourselves in the foot? It's bad enough a past president sold China the technology to guide these missiles to our doorstep, now we are selling them the technology to dominate other markets, as well as our economy.

Second, China has publicly announced it wants to be the No. 1 provider of PCs in the world. Combine that with China's growing market share in the rest of our imports, and what does that do economically to the U.S. and the world? We are being shortsighted in the deals we are making just to make a few more bucks on what could be a very slippery slope.

Dan Reising
Green Bay, Wis.

In "Reconsidering the IBM-Lenovo deal," Musthaler makes some good points and passes on some interesting insights from the employees' point of view. However, she doesn't address oft-stated concerns about the increased potential for Chinese industrial espionage. I do worry.

Of more immediate interest to me, since the new Lenovo operation is in my backyard, is their quick demand for state and local government incentives (more than $14 million so far) to preclude their moving the operation (1,900 jobs) elsewhere. How fast they learned about legal extortion.

Steve Wood
Raleigh, N.C.

*E-mail letters to jdix@nww.com or send them to John Dix, editor in chief, Network World, 118 Turnpike Road, Southborough, MA 01772. Please include phone number and address for verification.*

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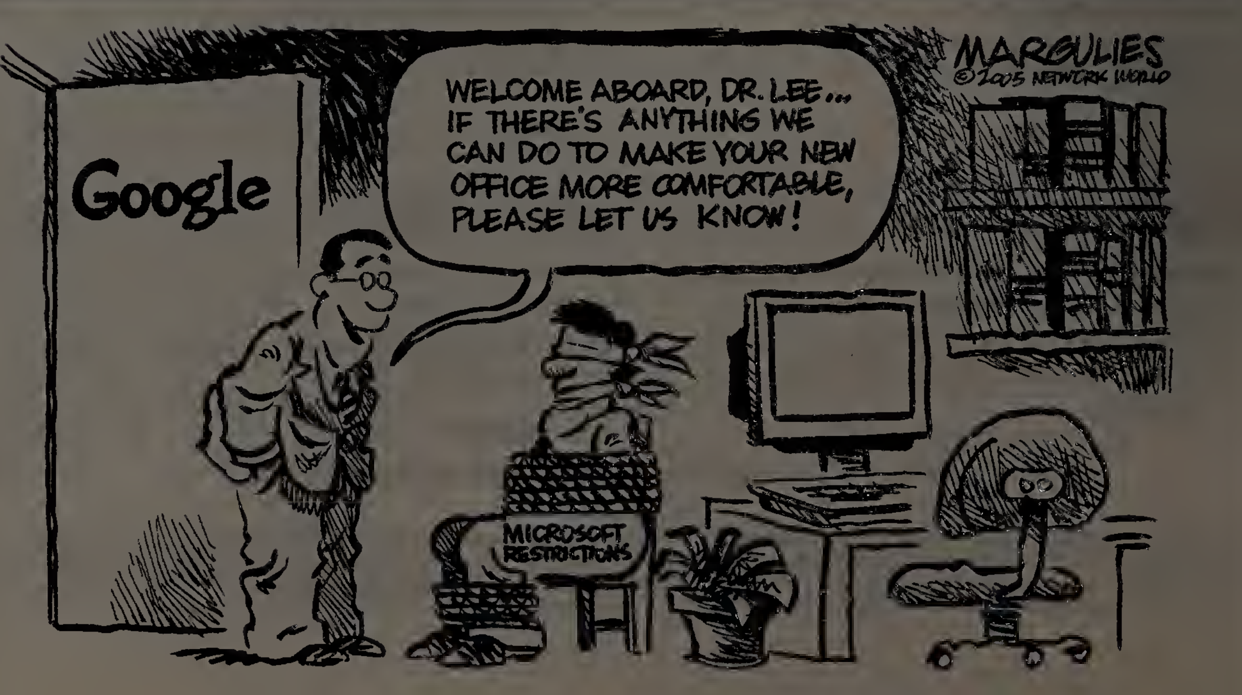
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**STRATEGY SESSION**
**Jeff Kaplan**

# Independent MSPs struggle to survive

Last month, another independent managed service provider was acquired by a major carrier. This latest acquisition offers lessons for the remaining independent MSPs and the various carriers, vendors and value-added resellers trying to win a share of the rapidly growing managed services market. It also has important implications for corporate decision-makers who are considering managed service alternatives.

MCI's plan to buy Totality represents the carrier's second major MSP acquisition of the year, following its purchase of managed security service provider NetSec. These acquisitions follow Cisco's purchase of NetSolve a year ago and Sun's acquisition of SevenSpace in late 2004. These transactions are being fueled by rising demand for managed services from companies and government agencies of all sizes.

The first generation of independent MSPs have been on a roller-coaster ride since their segment of the market took shape with plenty of fanfare in the dot-com era. Although many predicted that the MSP model would disappear with the demise of the dot-com boom, the managed services market has instead experienced a resurgence over the last two years as corporations seek to offload various parts of their IT operations.

While the escalating demand for managed services is certainly good news for early entrants in the market that have struggled to survive, it hasn't produced overwhelming financial success for many of these service providers. These first-generation MSPs are disappearing for three reasons: 1) They lacked sufficient visibility and credibility in the market; 2) They don't have broad channels to market; and 3) They carry too burdensome a cost structure as a result of building a broad set of IT infrastructure and application services around extravagant, showcase operations centers and homemade management systems.

> The new specialized MSPs are building their businesses on a more narrowly defined set of [services].

In order to offset these challenges, most of the first-generation independent MSPs augmented their remote management services with professional and consulting services to open customer doors and build customer trust that could be converted into managed service sales. The new specialized MSPs are building their businesses on a more narrowly defined set of application, desktop, e-mail, security, storage and other managed services with more strictly structured service packaging and pricing models, along with more highly automated service delivery mechanisms.

As the first-generation MSPs disappear, corporate decision-makers who prefer to out-task their day-to-day IT infrastructure and application management requirements may be left with only two alternatives: either cobble together a set of individual, stand-alone managed services from a growing array of niche-oriented service providers with specific management capabilities, or turn toward larger carriers, vendors, resellers and outsourcers that are aggregating an integrated portfolio of managed services within their broader set of products and services.

*Kaplan is managing director of Thinkstrategies, a consultancy in Wellesley, Mass. He can be reached at jkaplan@thinkstrategies.com.*

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**INDUSTRY COMMENTARY**
**Frank Dzubeck**

# Is there a 'virtual PBX' in your future?

In the past year we've seen increased demand for VoIP, most notably in the consumer peer-to-peer market. With Skype leading the way, peer-to-peer VoIP using the Internet has attracted major industry players such as Microsoft, Google, Yahoo and AOL. EBay's purchase of Skype and Microsoft's pushing instant messaging voice and the next-generation Windows Vista operating system will no doubt elevate peer-to-peer VoIP to a mainstream Internet application.

These consumer VoIP applications cannot be truly classified as telephony because most lack a set of robust standard features and the ability to connect to services such as 911. The use of Internet peer-to-peer VoIP to avoid carrier toll charges is the paramount driving force enticing users to the technology.

With IM becoming an important means of communication in the corporate environment, can IM-enabled VoIP be just over the horizon? If so, what will become of the corporate PBX?

There are two lines of thought on this subject. In the first case, transition to a hybrid PBX/IP-PBX environment is recommended to ease migration to VoIP. In the second case, a total "greenfield" switch to an all IP-PBX environment is recommended. Variations of these recommendations exist when taking into consideration handset upgrade/replacement and wireless access.

The reality of the marketplace may have created a third alternative based upon software virtualization/Web services technology and the potential of widespread corporate adoption of standards-based IM and peer-to-peer desktop operating system services. Today, several vendors market a peer-to-peer desktop equivalent to a PBX. This technology has not been widely adopted but proves the feasibility of the concept.

The "virtual PBX" is an extrapolation of this concept using Session Initiation Protocol (SIP)-based IM or equivalent handset services at the desktop, coupled with a corporate virtualized software application that provides a full set of telephony services — features, directory assistance, policy, administration, management and most importantly, on-net/off-net least-expensive routing access. If this sounds like the old concept of Centrex or the new concept of a softswitch, it is the natural evolution of both expanded to accept the next-generation software technologies.

> The use of Internet peer-to-peer VoIP to avoid carrier charges is . . . driving users to the technology.

Advances in software component technology, coupled with industry standards, let the old hardware PBX evolve into a virtual PBX that can provide voice services to corporations, as well as their extended partners in administrative/supply/sales chains. Both client and server hardware is becoming more reliable. The need for specialized hardware to perform the corporate voice communications function no longer exists. The current handset becomes a peripheral to the desktop and can be replaced with a stand-alone peer-to-peer handset, or becomes a seamlessly integrated software application in the desktop.

The integration of voice call control software into next-generation client operating systems, coupled with an excellent SIP interface and industry standards-based IM, will allow an efficient user-based peer-ro-peer communication platform to be created at minimal cost. Connectivity can occur through any mechanism — PBX, Internet, LAN, wireless LAN, Wi-Fi, WiMax or cellular/cable/carrier.

Each desktop or peer-to-peer handset now functions as a peer node to the virtual PBX software application. Communication between nodes is accomplished using an Enterprise Service Bus. Using virtualization software, the virtual PBX application can have multiple presences in multiple data centers.

Vendors such as Avaya and Siemens are building the software foundation of the virtual PBX architecture today. Pragmatism dictates that this type of software can be used to facilitate migration to a virtual PBX environment while over time making the current corporate PBX/IP-PBX-based voice structure obsolete.

*Dzubeck is president of Communications Network Architects, an industry analysis firm in Washington, D.C. He can be reached at fdzubeck@commnetarch.com.*

# the BUZZ issue

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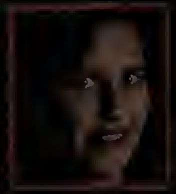

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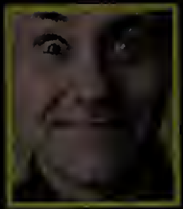
Beth Schultz, Signature Series editor,
bschultz@nww.com

**[illegible]** Need help building your services-oriented architecture? Vendors stand ready with a slew of services options. PAGE 67.

**[illegible]** Next up on the applications scene — enterprise software that can be bought, deployed and managed as easily as a typical network appliance. PAGE 70.

**[illegible]** The term is new, but is a SOBA really different from an SOA? PAGE 76.



**[illegible]** Once considered a specialty technology, the latest buzz pegs grids as great all-around application servers. PAGE 78.

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**Souping up the net** InfiniBand, EtherFabric, iWarp. Which high-speed interconnect will you chose to pump up your net? PAGE 88.

**Digging out new [illegible]** These attacker tools have become stealthier than ever. Even so, they may not require specialized protection. PAGE 92.

**Files for ransom** Ransomware has emerged as the latest security worry. How big is your risk? PAGE 94.

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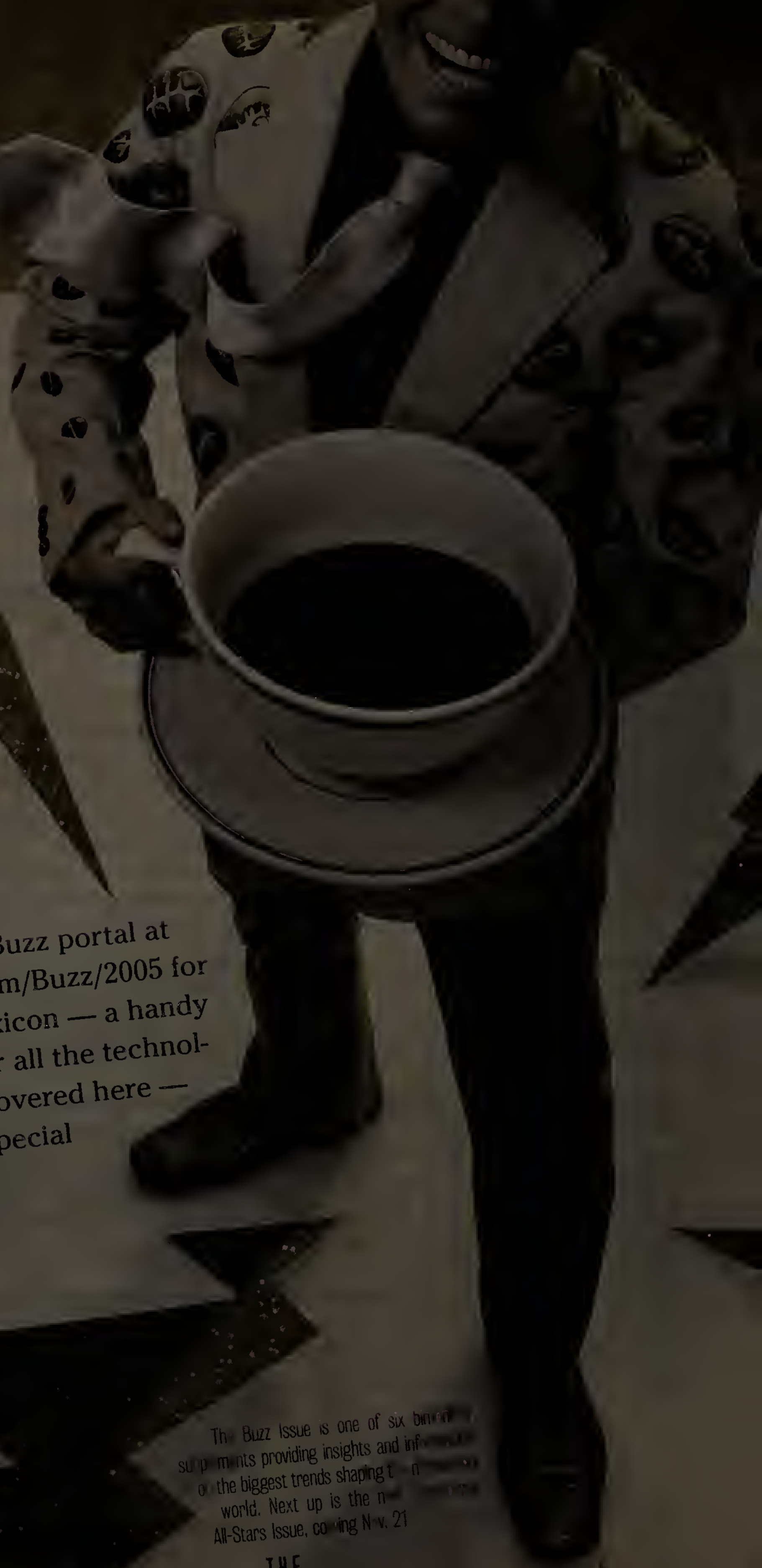

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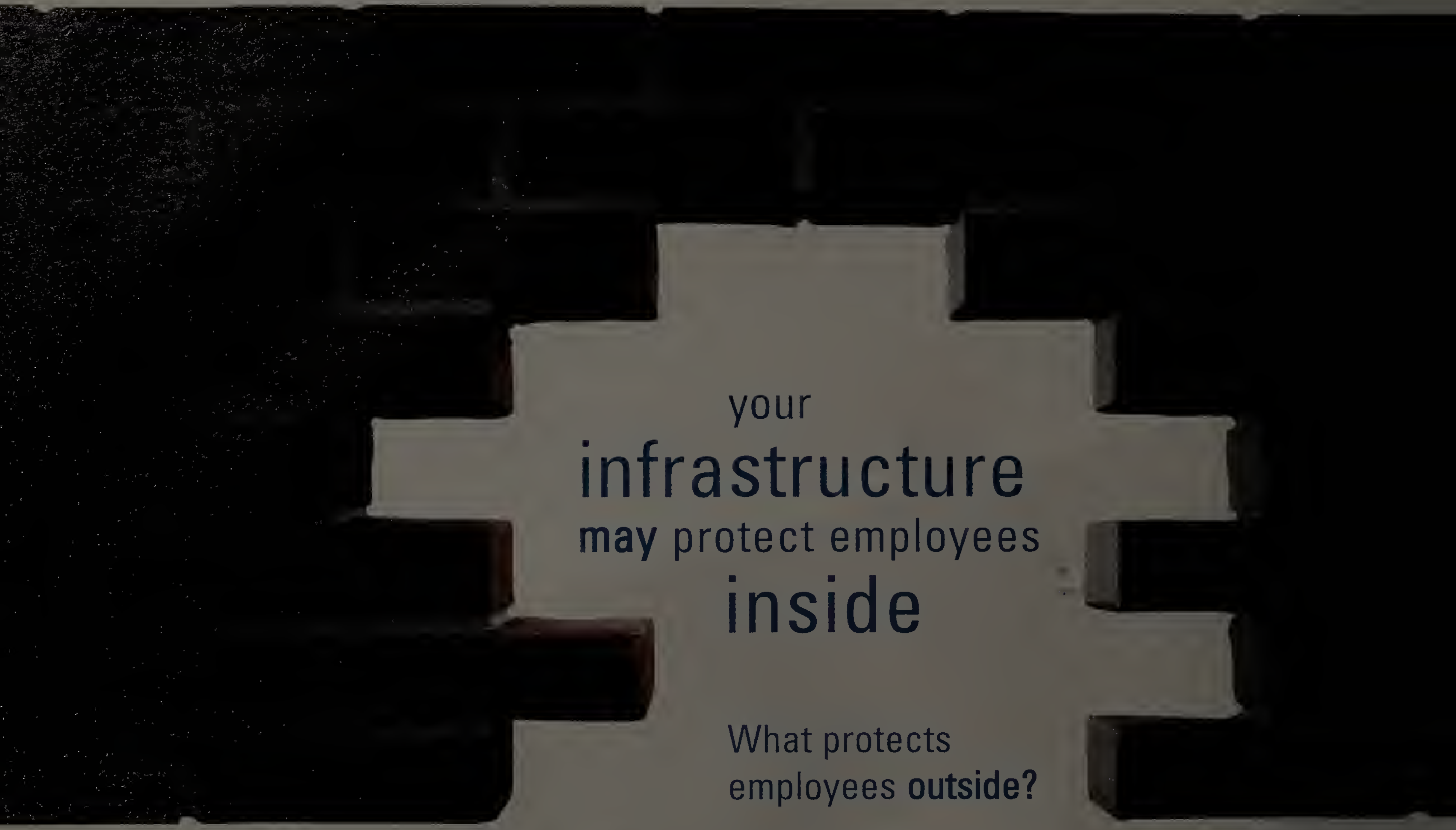

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# SOA—spawning a services market

### Need help building your service-oriented architecture? Vendors stand ready with a slew of service options.

BY DENISE DUBIE

Adopting a service-oriented architecture promises to transform rigid networks into flexible, agile application services delivery platforms that compile disparate IT components on the fly to meet business demands. The concept appeals to many — 87% of 100 CIOs recently polled by Goldman Sachs say they are using Web services now, and 54% plan to deploy infrastructure to support SOA by year-end. But many IT executives still have trouble identifying the practical steps needed to achieve an enterprise SOA. Vendors are more than willing to jump in and help out.

The catch is that SOA isn't easily packaged into new software license sales for vendors. SOA is more about changing the way IT delivers application services through architecture than getting a specific technology set in place. For instance, Web services technology and enterprise service bus (ESB) products could be part of an SOA, but companies using Web services and ESBs don't necessarily have an SOA. To make money in a growing yet still ambiguous market — the overall Web services market is expected to reach $21 billion by 2007, IDC says — vendors are adapting product-based sales pitches into services that offer to assess SOA readiness, govern SOA development and manage SOA implementations.

"The dirty little secret of SOA is that it doesn't require buying a lot of new software. SOA is architecture, and SOA is hard. It's not a one-off software project," says Ron Schmelzer, a senior analyst with ZapThink.

The buzz comes from companies such as BEA Systems, HP, IBM, Microsoft, Oracle, SAP, Siebel and Sun, which have spent the last year rolling out SOA services and establishing resource centers that are designed to help enterprises get on the path toward SOA. These vendors also provide technology components that could become part of a larger SOA such as application servers, middleware software, integration platforms, ESBs, Web services and application development tools.

## The services options

For example, last spring IBM unveiled services for planning, designing, implementing and managing SOA. HP in June launched SOA consulting services and opened four SOA competency centers aimed at helping business customers with everything from envisioning their SOA to rolling out and running it. BEA in May designed SOA services for government and public sector companies, and began offering an online assessment tool for measuring an organization's plans against a given methodology. The tool, called BEA Service-Oriented Architecture Readiness Self-Assessment, reports on results and recommends pricing.

SOA services could involve consultants meeting on-site with technologists and business managers to determine exactly what the company wants out of an SOA and where to start based on the current application infrastructure architecture. SOA can be put to use on internal integration efforts, but ideally it's set up to span IT and application silos and make code available for reuse across the company.

According to ZapThink, 80% of money spent today on SOA initiatives is for professional services, not software, and Schmelzer says, "Spending should continue to go in that direction." Unlike with software purchases, services spending is expected and almost required with SOA, because development requires less new code and more reworking of existing applications. Yet when it comes to buying SOA services, IT managers have to be sure they are investing in SOA and process expertise and not paying the vendor to get its software up and running. The challenge for IT managers will be to determine which vendors have the lion's share of expertise when it comes to designing architecture and establishing processes to support an SOA going forward.

"Right now the biggest gotcha with SOA is market confusion and lack of understanding," says Teresa Jones, a senior research analyst at Butler Group. "ESB and Web services vendors could promise to deliver SOA and fail, because their technology is just one facilitator to SOA. Wrapping an application up as a Web service doesn't necessarily make it reusable."

Instead, companies need help breaking down their applications and transactions into the right services that can then be put together in a different way to allow more flexible use of existing code. The drivers for SOA today are developing innovative, revenue-generating applications in-house and perhaps adding new elements to take advantage of the architecture, but it's not a revamping that will deliver cost savings and efficiencies unless the business applications are a good fit for SOA, Jones says.

"The real issue is organizational change, regardless of products and technology. SOA requires processes and policies and a shift in how IT is delivered. A good vendor can help an organization get on the path toward that change," ZapThink's Schmelzer says. IBM and HP could be good places to start looking for SOA best practice and process expertise with SOA. Each has clearly separate and defined professional services groups; that is, the revenue from professional services engagements isn't always directly related to a software sale.

## SOA services in action

Consider Jaime Sguerra, who as chief architect and senior business systems officer at Guardian Life Insurance, established a new way of using applications across the IT infrastructure. The goals were to connect all legacy and client-server systems to the distributed world and to establish an enterprise architecture that would enable services reuse. IBM helped retool certain applications, while in-house staff at the New York firm handled others, he says.

"For CRM, we needed this to be very efficient in terms of performance. We wanted subsecond response times," he says. IBM helped tune the application, and he worked to ensure business buy-in. "A lot of coordination work [is required] to get everyone from developers to the mainframe staff to the CRM group to buy into the SOA. Otherwise, adoption and governance become a challenge," he says.

Regardless of the vendor, SOA initiatives take incredible discipline. Says Sguerra: "You can't leave any room for people to have the option to build their own applications and not leverage what has already been built." ■

## 4 questions to ask vendors

- How much experience do you have implementing SOA? After you hear the product pitch, request client references similar to your situation to make sure the vendor can deliver SOA beyond implementing its specific product set.
- Are you certified in implementing best-practice processes? Most of SOA is architecture and processes, not technology. Vendors must know more than how to install integration middleware or an enterprise service bus.
- How are you going to equip me to maintain my SOA going forward? Whether it be engineering, training or process certification, IT shops will need tools to evolve, maintain and manage their SOA. An SOA is not a one-off project that a vendor can wrap up in a consulting engagement.
- What work are you doing with standards? SOA depends upon disparate components integrating on the fly. While vendor-specific wares and integration platforms can help, the ultimate goal is for interoperability via standards.

## 4 questions to ask yourself

- Is SOA right for my organization? A readiness assessment questionnaire available online from vendors could help determine at what stage your organization is, and if you are ready to take the leap to adopt SOA.
- Do I have a network architect on staff? An SOA environment is designed for flexibility and reuse in unpredictable conditions. Many networks today are built for predictability. A services group could help your staff design the SOA if there isn't an in-house architect.
- Can I establish SOA governance policies across IT silos? SOA will not work unless all departments in IT follow the core processes that the company establishes around SOA. A service provider can help establish policies across departments.
- Is there a business case for SOA? A full-blown SOA is a long-term commitment to a new computing platform. Consider your business model to determine whether the potential benefits of SOA will outweigh the costs and commitment. Vendors could provide case studies to demonstrate how SOA works for others in your vertical industry.

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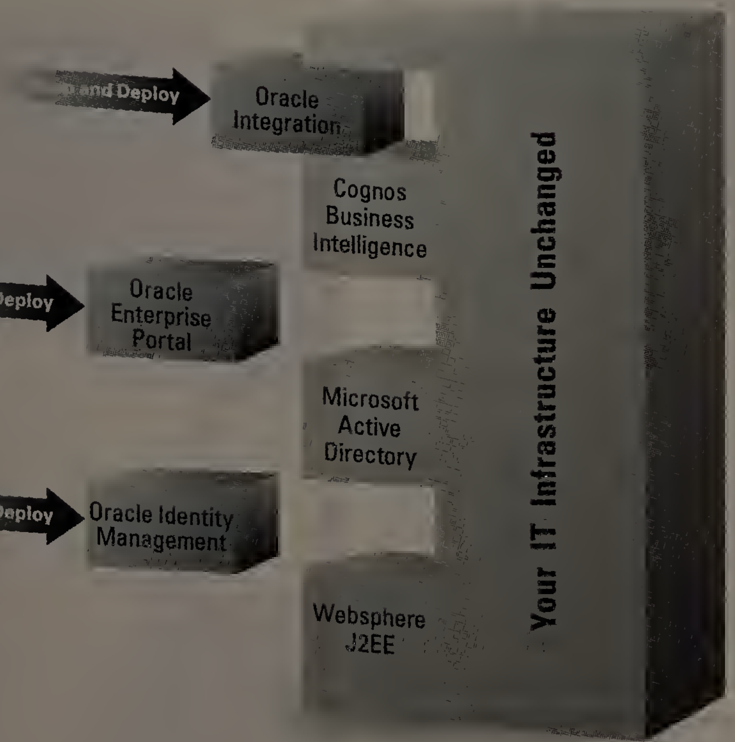
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# Software as appliance

Next up on the applications scene — enterprise software that can be bought, deployed and managed as easily as a typical network appliance.

BY JOANNE CUMMINGS

What if your next ERP or CRM package was as easy to implement as your firewall? That's the goal of providing software as an appliance, an approach that might make sense for any organization struggling with the complexities of buying, deploying and managing enterprise software.

Enterprise software — think SAP, Oracle, PeopleSoft — has its problems. Namely, it's expensive, complex, and difficult to deploy and manage. In fact, adding new applications into corporate environments usually means embarking on a lengthy integration project that often provides more headaches than functionality.

The industry's previous attempt to address such complexity resulted in the application service provider (ASP) model. With an ASP, deployment requires only an Internet connection and a Web browser, and the software comes as part of a leased, pay-as-you-go model, easing upfront costs. ASP-provided software is available on a modular basis, enabling organizations to buy and use only the functionality they need rather than integrating a huge feature-bloated software suite to get a few key functions.

Unfortunately, ASPs don't address all of today's business problems, such as data privacy and compliance issues.

"Essentially, an ASP model forces you to take user and customer data that is core to your business — HR, CRM or Web analytics, for example — and put it outside your corporation, under the watch of a much smaller, and oftentimes not-yet-profitable, young ASP," says Peter Relan, CEO of software start-up Business Signatures. "That's simply not tenable for most organizations faced with compliance issues today."

Enter the software appliance, which Relan says provides the best of the ASP and enterprise-site models. Like ASP software, a software appliance is modular, Web-based and available on a leased or pay-as-you-go basis. The self contained software modules include the core application logic running on top of an open source software stack — operating system, Web server and so forth. They have their own application-specific database and data management tools, and use the standard XML Web services API for all data import and export. Customers simply plop the software appliance on to a bare metal server and it runs. Just like a typical hardware appliance, no care and feeding is required by database administrators or operations personnel.

This technology, which Business Signatures is pioneering, is much like the "soft appliances" available today primarily in the security or storage world from companies such as Permeo Technologies with its Base5 VPN soft appliance and Network Engines with its NS series appliances. These provide software in a similar fashion — designed to run on a user-provided server but with the simplicity and functionality of a typical hardware appliance. The difference, Relan says, is his software is more enterprise in nature, and has its own application-specific database and database management tools that make it completely self-managing and self-healing.

"Simply placing your application logic on a LAMP [Linux, Apache, MySQL, Perl] stack is not sufficient because the customer still needs to deal with the Linux operating system and the management and support of all that," Relan says. "We say, 'Yes, it runs on a LAMP stack, but you do not have to manage anything at all.' "

The core Business Signatures software, called the Intent Processor, has an embedded relational engine that requires "no archiving, no data management, no table-spacing — no [database administrator]," Relan says. In addition to the application logic, Business Signatures wrote key soft-

See Software, page 74

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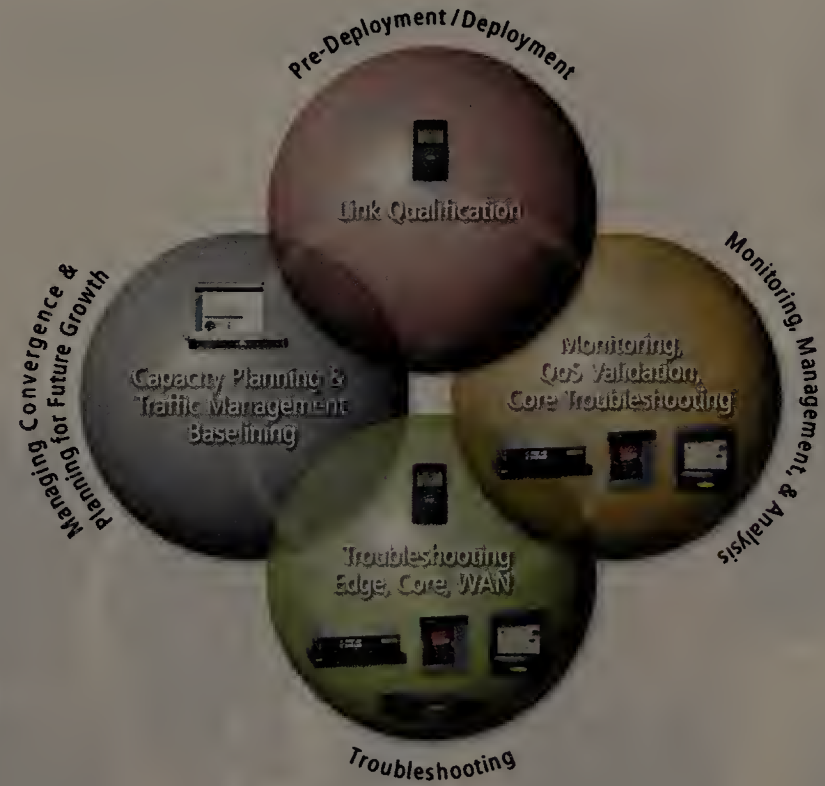
# Deploying VoIP Successfully in Your Organization

## A Solution for the Entire VoIP Lifecycle.

*In today's competitive environment, many organizations are turning to VoIP (Voice over Internet Protocol) as a way to cut costs, boost productivity, and increase their competitive advantage. In fact, more than 70 percent of organizations now use VoIP in some capacity.* However, VoIP systems present some special IT challenges. First, because end users expect IP phones to work as reliably as land lines, VoIP systems must meet exceptionally high quality and performance standards. Second, even if the system works fine initially, later network changes could affect call quality – or a growing VoIP system could affect other mission-critical applications. So to minimize problems, you need to verify before deployment that your infrastructure can support VoIP; thoroughly examine all system elements during deployment; and manage your VoIP system proactively after deployment, including ongoing monitoring, troubleshooting, and planning for future growth.*


Pre-Deployment/Deployment
Link Qualification
Monitoring, Management, & Analysis
Monitoring, QoS Validation, Core Troubleshooting
Troubleshooting
Troubleshooting Edge, Core, WAN
Managing Convergence & Planning for Future Growth
Capacity Planning & Traffic Management Baselining

### Pre-deployment/deployment

Before deployment, Fluke Networks tools help you qualify your cabling infrastructure to make sure it can support VoIP. For example, NetTool VoIP enables you to verify Ethernet connectivity, speed, Power over Ethernet (PoE), VLAN and port configuration for each link, and more. In addition, during deployment, NetTool VoIP verifies that the IP phone and network can communicate.

### Ongoing monitoring and management

After deployment, you need to monitor bandwidth usage and QoS (quality of service) for both the VoIP system and the network as a whole, quickly determine the source of any degradation, and fix it. OptiView Protocol Expert and Link Analyzer monitor bandwidth utilization and generate alarms when QoS thresholds are exceeded. ReporterAnalyzer provides a combination of real-time insight and long-term data analysis, helping to identify the VoIP system's role in traffic volume and prioritization as well as call pathways used. The OptiView Integrated Network Analyzer isolates call setup problems at different locations on the network; and WAN Analyzer sits outside the router and monitors all inbound and outbound traffic for an entire interface or location.

### Troubleshooting

The network's edge is a good place to start troubleshooting, and NetTool VoIP is the ideal tool, showing communication details between the IP phone and call server. If no problem exists there, Protocol Expert and Link Analyzer provide more in-depth troubleshooting, generating real-time QoS analysis to quantify and isolate the degradation, plus packet analysis to uncover configuration problems. In addition, Integrated Network Analyzer** shows detailed VoIP information for every call captured. With these tools, you can identify both single-user problems and those propagated among many users.

### Planning for future growth

Many organizations deploy VoIP in batches, starting with a pilot program and then rolling it out more extensively. Studying trend and baseline data from your current system will help you determine whether you have enough capacity to handle growth or need to add new resources. ReporterAnalyzer provides capacity planning information and shows the rate at which VoIP traffic volume has grown over time, while Protocol Expert and Link Analyzer provide a performance baseline by calculating an aggregate health score for all VoIP calls being carried over a specific link or VLAN.

### A VoIP lifecycle solution

To help you with these tasks, Fluke Networks offers a comprehensive solution that enables you to manage the complete VoIP lifecycle. The solution includes:

- NetTool™ VoIP, an easy-to-use, portable tool for testing communications between the IP phone and other elements of the VoIP network, and for troubleshooting problems at the network's edge.
- OptiView™ Protocol Expert, a protocol analysis and monitoring solution that can quickly isolate and resolve problems such as slow response times.
- OptiView™ Link Analyzer, a hardware analyzer that works with Protocol Expert to report on network traffic and provides real-time packet capture and analysis, QoS metrics, and alerts.
- OptiView™ Integrated Network Analyzer, a portable analyzer that captures and analyzes voice traffic and provides QoS assessments for each call.
- OptiView™ WAN Analyzer, a multi-function analyzer that provides in-depth analysis of WAN interfaces.
- ReporterAnalyzer™, a NetFlow-based monitoring and analysis solution that provides enterprise-wide visibility into bandwidth usage.

**What makes this comprehensive, single-vendor solution unique is that:**

- **All products offer both network and VoIP specific analytics** – an essential combination, since each has a potential impact on the other.
- **QoS analytics isolate statistics by channel**, a more powerful approach than single-call measurements because it isolates the *direction* of degradation.
- **All products use real-time monitoring or packet analysis**, basing results on *real* traffic, not synthetic tests.
- **The Fluke Networks solution provides end-to-end VoIP lifecycle management** with differentiated measurement and analysis solutions that align to your deployment needs.

*For more information*

*To learn more about how Fluke Networks' comprehensive VoIP lifecycle management solution can help you, visit* ***www.flukenetworks.com/voip.***

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** Network World Special Report – VoIP: Challenges, Drivers, Hurdles and Recommendations*

*** Integrated Protocol Expert will be available on the Integrated Network Analyzer in Q4, 2005.*

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## Software

continued from page 70

ware designed specifically to manage that application-specific logic. “It’s not generic; it’s addressing the very application-specific data management problems for that particular logic,” he says.

In fact, experts say the overall success of the software appliance strategy hinges on how well the self-healing and self-managing portions work.

“Lots of vendors promise that. IBM has been working toward that promise for a long time, and it’s still just that — a promise,” says James Kobielus, a senior technical systems analyst at XO Star, an independent consultancy. “The reality of any complex hardware, firmware or software product is it isn’t that easy in practice. So I take any vendor’s claim of self-healing and self-managing with a grain of salt.” Users say Business Signatures delivers on that promise, at least so far.

That’s been the case for online grocer Safeway.com, which has used several software modules to monitor Web site performance and to ensure optimal customer satisfaction with the site, says Joe Divine, CTO of the Pleasanton, Calif., company. He runs Business Signatures’ software on a re-purposed Web server, a 3U box with dual 3-GHz Xeon processors, 2G bytes of memory and eight 36G-byte disk drives. “It was a box we had here anyway,” he says.

In six months, the software has required no maintenance on his part. “It scales and manages its own infrastructure and componentry, its disk space and memory, within the application,” he says. “Once it’s installed and up and running, it makes the best decisions about how to prioritize, distribute, archive and so on. We don’t have to worry about that.”

On average, the application requires about 2K bytes of storage per week. “We’ll all be dead before we run out of disk space,” Divine says. “We never touch it.”

Although Divine says he would have bought the Business Signatures software even if it weren’t developed and deployed as a software appliance, he does see key advantages to the form factor. “I like that it’s appliance-like, but typical hardware appliances are not very upgradeable. If you want to upgrade them, you usually have to purchase a whole new box. With this, I can use the same box and just deploy the upgrade.”

It also makes sense from an efficiency standpoint. “If I decided for some reason, which I doubt I will anytime soon, to part ways with Business Signatures, I could take the hardware that I’ve dedicated to it and I could re-purpose it somewhere else in my enterprise. That’s a significant advantage over a typical hardware appliance.”

Mike Riley, vice president of marketing and strategy at Network Engines, which also helps application vendors develop appliances — software- and hardware-based — says both are viable but the key is their self-management. “Many of our customers think that turning an application into an appliance is all about the hardware,” he says. “But to us, an appliance is more about the software” because it has to be remotely manageable, maintainable and updateable.

“If you lose touch with it and it has a problem, it has to be able to do some self-diagnosis or self-correction,” he says. “How do you know you can back up the configuration and then restore it when it comes back online? All of those kind of system-level attributes are software problems.”

Riley says he sees enterprise software appliances gaining traction. Security and storage executives buy hardware-based appliances because they are used to purchasing and managing devices. But enterprise and data center managers are accustomed to purchasing hardware in long-term contracts from vendors such as IBM, HP and Dell. They look to purchase software to run on the hardware they have on hand. “The market is good for both approaches,” he says.

Where Riley really sees software appliances taking off are in enterprise data centers that use blade servers. “When you’re buying a blade server, the last thing you want to do is buy 10 copies of an operating system, 10 different applications and 10 pieces of management software, integrate it and load it all up,” he says. “The whole notion of blade server is that you can significantly increase the density of applications and processors in your data center, but in so doing, you’re also adding a whole bunch of complexity if you literally pre-load every blade yourself. With a software appliance, you can image a blade rapidly. So not only do you have this self-managing piece of software, but you also have it running on a self-managing piece of hardware. It’s pretty compelling.”

*Cummings is a freelance writer in North Andover, Mass. She can be reached at jocummings@comcast.net.*

## PROS AND CONS OF SOFTWARE APPLIANCES

*Software appliances work well in some situations, but might not in others. Here are five considerations.*

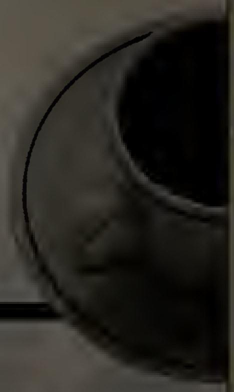
● **PERFORMANCE.** Some applications are extremely performance-driven. In those cases, it might make sense to go with a hardware appliance in which the application and the processor are closely aligned to ensure optimal performance.

● **PURCHASE STRATEGY.** For organizations accustomed to purchasing and deploying devices, hardware-based appliances make sense. But for organizations with long-term server contracts looking to re-purpose hardware, software appliances fit the bill nicely.

● **UPGRADES.** Unless a hardware appliance vendor has thought it through, upgrades might require a new device — hardware and software. Software appliance upgrades can usually be deployed on the current server, with no new hardware required.

● **SECURITY.** Software appliances, like their hardware brethren, tend to be more secure than traditional software because the entire operating system and application stack can be hardened more readily.

● **INTEGRATION.** Software appliances use standard interfaces, such as Web services XML API, to integrate with legacy environments more easily. For example, Business Signatures data can be viewed on its own Web console, or it can be brought into an Excel spreadsheet, which supports the XML API, and is readily customized for the business.



## 5 questions to ask concerning software appliances

**Many vendors say they sell software appliances, but few actually do. Getting the buzz on these questions will help you determine whether your vendor is delivering a true software appliance.**

**HOW IS IT PRICED?** True software appliances are priced flexibly. At the least, they should be offered on a pay-as-you-go leasing basis. At best, they should be offered in both forms, leased and traditional.

**HOW MODULAR IS IT?** True software appliances deliver their features in a modularized, optimized way. They aren’t like monolithic software platforms that are all things to all people. Instead, they allow users to pick and choose the functionality they need.

**HOW STANDARD IS IT?** True software appliances support well-accepted standards, such as the LAMP stack and XML Web services API. This way, they are non-intrusive and easier to deploy. If the software requires a large integration project, it’s not a software appliance.

**HOW EASY IS IT TO MANAGE?** True software appliances are easily managed, updated and repaired remotely. They also should have some kind of inherent self-management and self-healing tools. If care and feeding from the enterprise staff are required, it isn’t a software appliance.

**HOW SECURE IS IT?** True software appliances tend to be more secure than their traditional software counterparts because they are built upon a hardened operating system and application stack that supports only the features and functions necessary for the appliance. If it runs on a non-hardened, general-purpose operating system and stack, it’s not a software appliance.

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# The service-oriented business app

## The term is new, but is a SOBA really different from an SOA?

BY JOHN FONTANA

Following on the heels of the service-oriented architecture, the service-oriented business application is generating the latest buzz in distributed computing. While distinguishing between SOA and SOBA isn't easy — since both terms are used to describe constructing application infrastructures from Web services — the idea is that SOBA can be deployed on top of SOA, or other infrastructure models. The term's creator positions SOBA as the ultimate incarnation of the client/server business application — ERP, CRM and others — that has become today's monolithic beast.

"A SOBA is a client/server application done right," says Charles Abrams, a Gartner research director, who coined the term more than two years ago. "It is a business application that is centered on Web services standards."

In Gartner's model, SOBA ranges from today's simple XML interfaces overlaid on a current application to a far more sophisticated application infrastructure that will evolve. Rudimentary SOBAs are legacy applications modified with a Web services interface based on Simple Object Access Protocol. SOBA variants on the horizon include: best-of-breed components for broad deployment in horizontal or vertical markets; modular corporate suites from vendors such as Oracle and SAP; and SOBAs constructed from multiple services developed internally within corporations, sold by vendors or built by system integrators and service providers.

As the sophistication ratchets up, users will need tools such as metadata repositories to smooth data format issues along with Web services standards for functions such as reliable messaging, transactions, management and business process orchestration. Those standards are in various forms of development today and represent a major speed bump on the SOBA road. Eventually, SOBA will be wholly constructed using network-based application services — as discrete as validating a purchase order — that are combined on the fly with other services to execute a business process, such as a transaction with a business partner.

At some point, SOBA is expected to spell the doom of monolithic business applications by unlocking functions trapped today within ERP, CRM, supply chain and other applications, experts say. By 2008, more than 70% of companies will be using SOBAs to collaborate with business partners, Abrams predicts.

While many users and experts agree on the SOBA concept, they don't all agree on the terminology. Skeptics say that SOBA is just a Gartner label and not much has changed in the years since XML and its derivatives sparked the notion of standardized services running on a network.

"The idea is that down the road all this stuff magically starts working together, and at that point you have this ability to assemble application systems from these shared reusable services," says Anne Thomas Manes, an analyst with Burton Group. "Of course, that is the dream behind Web services in the first place."

To users, the terminology is less important than the process. Take Tyrone Paige, an application architect with JetBlue Airways in Forest Hills, N.Y., who says he's not familiar with SOBA despite being busy building an SOA and constructing a set of application services using technology from Microsoft and SOA Software. "Composite applications are on our [road map]. It sounds to me like SOBA is just a twist on composite applications. We plan to have business processes that will leverage our services," he says.

However, vendors seem to be latching onto the SOBA concept and, in some

See SOBA, page 96

## 4 questions to ask

- How are you deconstructing monolithic applications and exposing the functions of your software?
- Are you using Web services specifications beyond simple Simple Object Access Protocol wrappers?
- Are you participating in the creation of Web services standards such as those for transactions, reliable messaging and orchestration?
- How do you plan to incorporate these standards into your applications/platforms?

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# Grid surprise

Once considered a specialty technology, the latest buzz pegs grids as great all-around application servers.

BY JULIE BORT

As grid computing enters more enterprise environments, the buzz over the technology's potential never ceases. Once grids are installed, network executives find them useful for a far wider variety of applications than just computationally heavy ones. They also work well for applications that have high transactional volumes or are data intensive. And after sending those apps to the grid, it dawns on these early adopters that what they have is a giant, powerful — and comparatively inexpensive — next-generation generic application server.

"We have more than 700 nodes on our grid. Grid is our virtual application server that includes Windows, Linux and Solaris/Sun applications. We do have [dedicated] application servers, but our basic plan is to use the grid to provide a very viable alternative to expensive Sun platform boxes," says Robert Ortega, vice president of architecture and engineering for Wachovia, in Charlotte, N.C.

As it turns out, the "application" that a grid is almost innately suited to serve is none other than the industry's next-generation application itself — Web services.

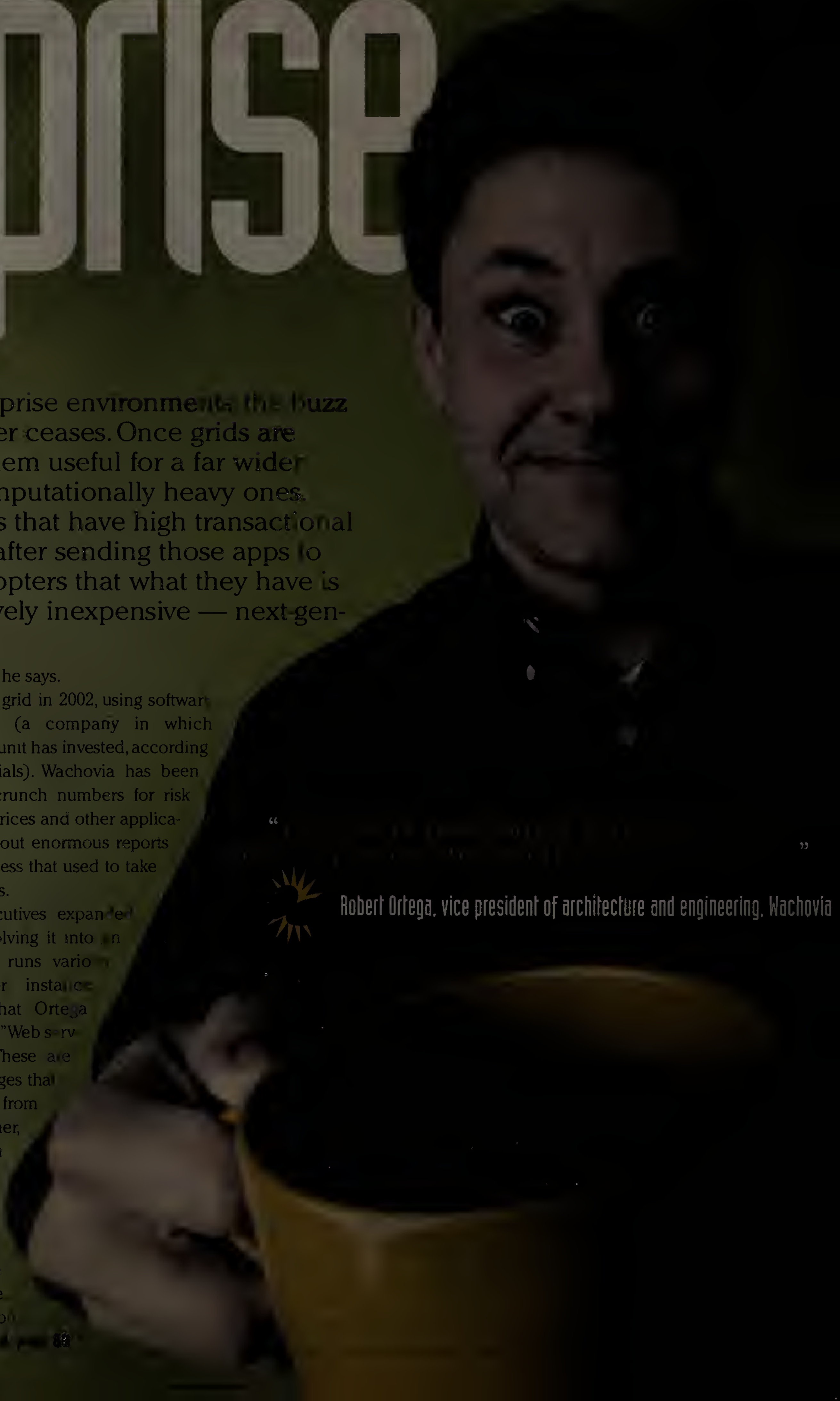
"There's no point in moving an entire organization onto a service-oriented architecture, but host and provision those services in fixed, static [hardware] silos — where each application or service is run in its own separate environment, with its own personnel. If I'm going to marry my vision of loosely coupled services to an on-demand environment, I'm going to assume that the grid will allocate and provision [hardware] resources on demand as my service levels fluctuate," says Peter Lee, CEO of grid middleware vendor DataSynapse. "Grid is a very logical underpinning to achieve an SOA."

Ortega agrees. "Originally, the grid was only used for compute-intense applications, but now we're positioning it as a general-purpose transactional environment," he says.

Wachovia built its grid in 2002, using software from DataSynapse (a company in which Wachovia's venture unit has invested, according to Wachovia materials). Wachovia has been using the grid to crunch numbers for risk analysis, securities prices and other applications, and to crank out enormous reports — a 15-minute process that used to take 15 hours, Ortega says.

Last year, IT executives expanded use of the grid, evolving it into an SOA platform that runs various Web services. For instance, Wachovia runs what Ortega calls "transformation" Web services on the grid. These are transactional messages that must be converted from one format to another, or that call on an application rule. Ortega uses Web services as the middleware between APIs. A Web service is used, for example when an application

See Grid, page 88



"[illegible]"

Robert Ortega, vice president of architecture and engineering, Wachovia

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## Grid

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requires data to be converted into a Java JAR file or a Windows DDL. By using a Web service to do the conversions, data can be passed from one proprietary application to another without custom API work. And because Wachovia's systems can field some 5,000 transformation messages per second, the grid's nearly unlimited power makes such an application design feasible, Ortega says.

In fact, the grid is the server of choice for "any application that somebody's trying to build here that uses a J2EE application server," he says, adding that to the run-time version of the Java app the grid looks no different than a stand-alone server. "We keep it virtualized, meaning that apps don't connect to a specific set of hardware, but to an abstract layer." This abstract layer is the DataSynapse software that distributes the workload among the available CPUs on the grid, collects the results and hands them back to the application — as if the underlying CPU was a server and not a grid. Ultimately, Ortega envisions that this giant application server will become the basis for utility computing at Wachovia and for converting IT into a managed service model where departments are charged for their use of the utility.

Wachovia, while perhaps further along than most businesses using grid, is hardly alone in its view of grid as a generic application server rather than a specialized server that's not suitable for many applications, says grid guru Ian Foster, director of grid technologies for Argonne National Laboratory and a founder of grid services firm Univa (a start-up to watch for 2005; see www.networkworld.com; DocFinder: 9021).

"Web services on grid computing is being well received," he says, crediting the number of Web services/grid standards for such progress (see below). "What's been somewhat of a surprise to [the grid community in the last year] is that grid has become very much the mainstream infrastructure — grid is what makes it possible to build flexible service-oriented architectures."

### Rewrite those apps

Early grid adopter Terry Talley, a senior engineer for Acxiom, finds grids to be natural as SOA application servers. He sees services in an SOA as inclusive of both cutting-edge Web services and older technologies such as Common Object Request Broker Architecture (CORBA). Acxiom, a data warehouse/data mining system integrator in Little Rock, Ark., built its grid in 2001 to handle the massive amounts of data cleaning needed to convert client archives into functional warehouses. Since then, the grid has become a foundation for nearly all of Acxiom's data warehouse services.

"We have a lot of [Web services and CORBA] on our grid — and that's not an accident. We require massive throughput … millions of records per hour," he says.

But Talley offers one strong caveat — most applications will need to be re-architected to run on a grid. "In some cases, you can deploy software on grid with little or no change, but that's not typical. To really exploit the grid, you want to look at how your applications can exploit large amounts of CPU," he says.

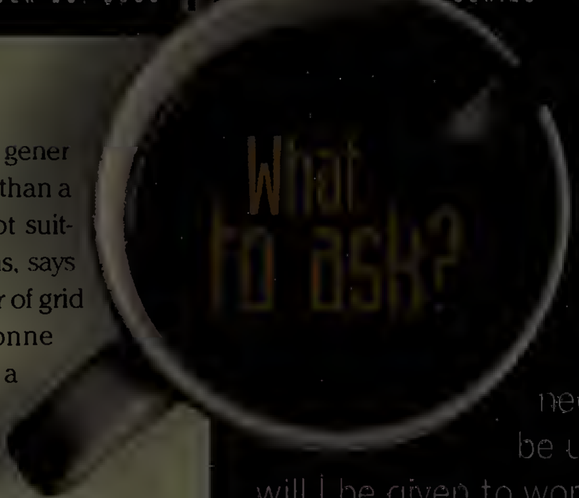
Applications that consider CPU as a nearly endless resource are rare because of the IT industry's traditional mainframe orientation, Talley says. Application developers have been taught to go to extremes to shove lots of applications on the server "and squeeze everything they could out of that box," he says. With grid, the reverse is true. CPU resources are nearly endless. An application has to be able to be split apart into lots of tiny processes, it has to be functional on a multiprocessor design, and it has to be tough enough to handle delays in some parts of its processes.

Ortega agrees, but adds that because Wachovia's grid has virtualized the application layer with transformation Web services, the financial services giant has made it easy for its strategic vendors to step up and re-architect their software. "All the vendor has to do is generate a model [where code is] packaged in a .dll or Java class and DataSynapse does the rest. Once we deploy that [.dll or Java class] to the grid, then that piece of code appears as a pure Web service," he says.

At least some enterprise application vendors are toying with grid-friendly designs. SAP, for example, has publicly demonstrated grid versions of its CRM and supply chain management (SCM) software. SAP — the poster child for the monolithic applications — carved out portions of its big centralized system so that they could be run on multiple servers using the open source Globus tool kit as the grid infrastructure, says Foster, one of the creators of the tool kit. "When the app said, 'I need another 10 servers to meet my workload demands' it reached out to the [grid] infrastructure to meet the demand," he says.

These demonstrations were especially significant for enterprise grid computing because they showed portions of the CRM and SCM software complying with Open Grid Services Architecture, the grid/Web services standard, Foster says. And that was a significant move to prove that any business app can run on a grid, he concludes.

For network executives, it also might be a message about your next application server computing platform: Think big. ■



## What to ask?

**Grid software vendors:** ■ What software has been demonstrated to operate on your grid infrastructure? ■ What do I need to do to my applications so they can be used across the grid? ■ What support will I be given to work with my current enterprise application vendors to move software to the grid? ■ What interoperability tests have been done with your software and other virtualization products?

**[illegible]** ■ Is anyone running this software on a grid? ■ Is anyone running this software using data virtualization? ■ Can this software be modified so that its computational needs are divided among a large multiprocessor system? ■ What are you willing to do to adjust your software so that it can be operated on grid?

## Grid and Web services standards bodies

**Enterprise Grid Alliance** — A consortium of vendors and others that have created a reference model for grid in the enterprise.

**Global Grid Forum** — A scientific, open source and user community defining a series of standards for its Open Grid Services Architecture.

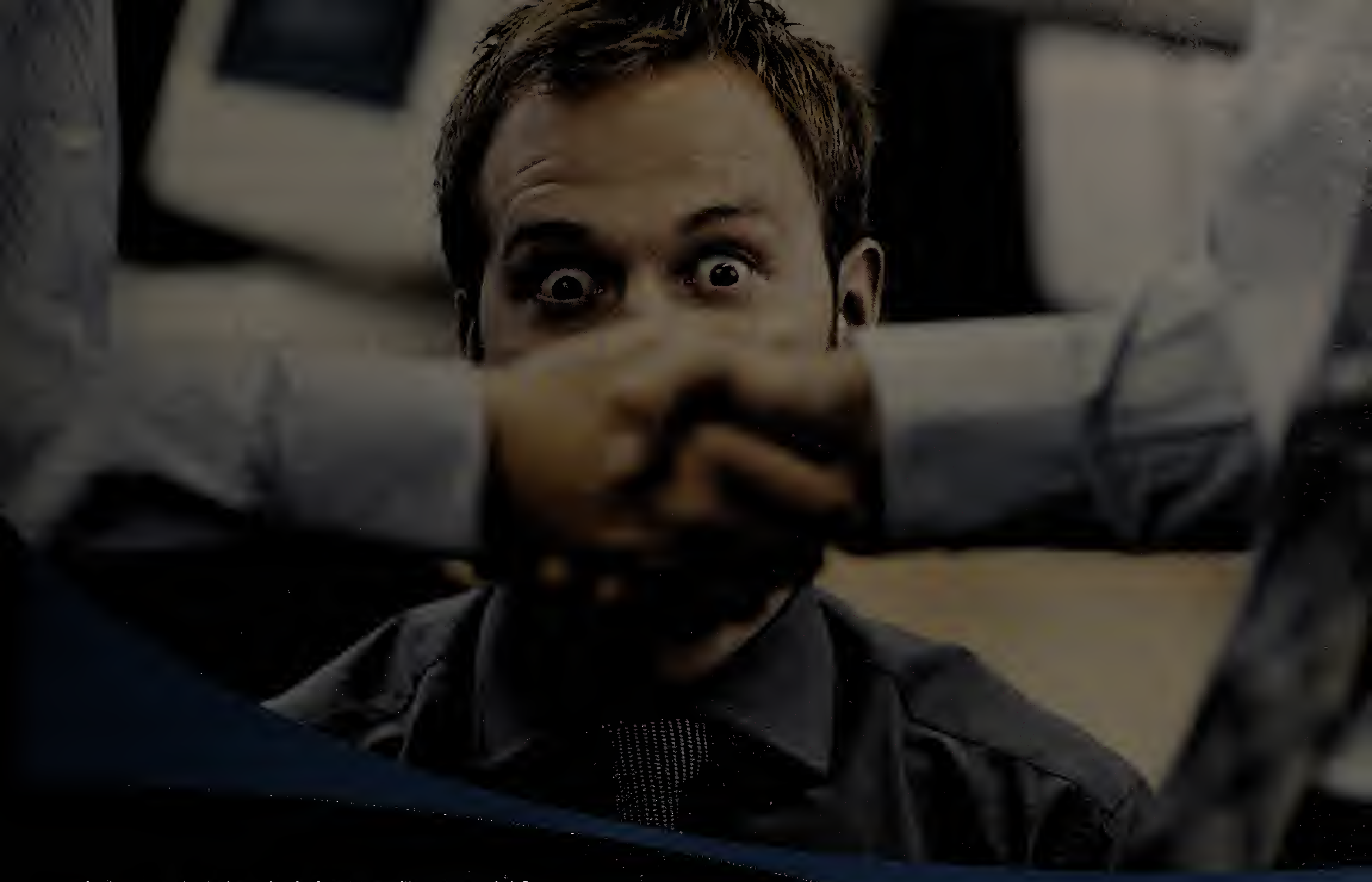
**Globus Alliance** — A consortium of mostly academicians and scientists creating an open source development tool kit for building grids.

**OASIS** — This Web services standards body approved the Web Services Distributed Management standard (in March 2005) for defining management of Web services in a highly distributed environment. It is working on other standards, including WSResource Framework.

## Grid and virtualization

*The following types of virtualization can be helpful when using a grid as the application server for a service-oriented architecture.*

- Application/business logic virtualization, such as Web services, where the business logic can be run on any type of underlying application server, even grid computers.
- Data virtualization, in which the grid would connect to an abstract layer that then retrieves data from any repository.
- I/O virtualization, in which the abstract layer separates the grid from storage systems.
- Operating system virtualization, in which the operating system is separated from the grid hardware.



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# Are holograms in your storage future?

## Holographic technology promises huge advances, but skeptics abound.

BY DENI CONNOR

Imagine storing 20,000 X-ray images on a disk the size of a credit card. That's one grand promise stirring up the buzz over holographic storage for the enterprise.

Hal Weiss, systems engineer with Baptist Memorial Healthcare in Memphis, Tenn., is one user following the holographic storage buzz. Weiss sees holographic storage as a means to handle the increasing amount of data — medical images and X-rays — he must archive to meet Health Insurance Portability and Accountability Act requirements.

"I'm interested in holographic storage for the simple fact that you can store just a huge amount of data in a small space and the retrieval times are enormously faster. I'm hearing that holographic storage can recover millions of bits of data a second and can sustain that reliably," says Weiss, who uses EMC's Centera, Copan Systems' Revolution 200T and a big DVD jukebox in his organization to store 48T bytes of data.

Analysts and enterprise users such as Weiss see a future in holographic disk technologies as archival, long-term storage media. Financial records and high-definition video used in broadcast media also are data types eyed for holographic storage.

Like other technologies such as Serial ATA, holographic storage has its roots in consumer-based products. The charge-coupled devices (CCD) and LCDs found in digital cameras are used in holographic storage to read the data back. The drives will be costly, but the price is expected to fall once more vendors adopt holographic storage.

### Two approaches

Storage watchers hold out the most hope for a technology under development at InPhase Technologies, a Bell Labs spinoff. Called polytopic recording, this holographic approach records through the depth of the media in three dimensions. Holography records and reads 1 billion bits of data with each flash of light, InPhase says. To record a holographic image, a laser beam is split in two — the signal beam carries the data; the reference beam positions where the data is written and reads it. The data is arranged in a checkerboard pattern of light and dark pixels, each pixel being formed when the two beams intersect.

An InPhase Tapestry holographic disk will hold 60 times as much data as a DVD and write data as much as 10 times faster, the company says.

Conceived more than 50 years ago by a Hungarian physicist, this technology is finally coming to reality — InPhase earlier this year demonstrated a 300G-byte prototype at the National Association of Broadcasters using film provided by Turner Broadcasting System. Shipping technology is expected by September 2006, with a 1.6T-byte disk slated for delivery by 2009, the company says.

Collinear holography, a second approach to holographic storage, also is expected to result in DVD-sized terabyte-class storage devices. The technology, provided by Japanese vendor Optware, is as much as 40 times faster than traditional DVD, the company says. Optware expects to introduce a 200G-byte enterprise-class removable disk in June 2006, initially targeting healthcare organizations. The amount of digital data storage for this market will grow from about 167 petabytes in 2005 to 363 petabytes in 2007, said Yoshio Aoki, Optware president, at a press conference earlier this year.

While media vendors FujiFilm and Toshiba have adopted Optware's collinear holography technology, Hitachi Maxell and Pegasus Disk Technologies are developing products that use InPhase's polytopic recording technique.

### Skeptical technology?

Not everyone is sold on the potential of holographic storage. Randy Kerns, an independent storage analyst in Boulder, Colo., worries about a host of issues, including how long the data can be preserved. (InPhase says at least 50 years on its technology.) "The densities are not that impressive yet and neither is the capacity. Assuming the persistence problem is fixed, will the densities and capacities be a step function improvement? Just a little better won't be enough to justify change," he says.

Even Baptist Memorial's Weiss expresses concerns. "Before I even entertain using holographic storage, I want to know how long the data can remain in that state and how easy it is to recover. And is it going to be totally proprietary? Both vendors use the same words to describe their technologies, but they don't mean the same thing."

To address the proprietary issue, Optware, FujiFilm and CMC Magnetics, among others, formed the Holographic Versatile Disk Alliance to work on standardization. And, in January, Optware submitted its technology to industry association Ecma International as the basis of a proposed standard. ■

### 5 questions to ask concerning holographic storage

- How much archival data do you have?
- Will the initial size of the disks (200G to 300G bytes) be sufficient for archiving this data?
- Are you concerned that holographic media will be removable?
- How long will your storage media last in the long run?
- Are you concerned that — at least initially — holographic storage systems will be proprietary?

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# RFID automation

### Vendors hope their latest RFID wares will automate the supply chain, but cost, reliability and security issues must first be addressed.

BY JULIE BORT

The industry buzz says that RFID is the next great ship sailing to the promised land of automation — in this case, supply chain automation. Last year's ratification of EPCglobal's Generation 2 standard (for multi-vendor interoperability between chips and readers) joins the ongoing mandates from Wal-Mart, the Department of Defense and the FDA. With Cisco's announcement earlier this month of its new RFID add-on board, the technology appears to be on course for mass adoption.

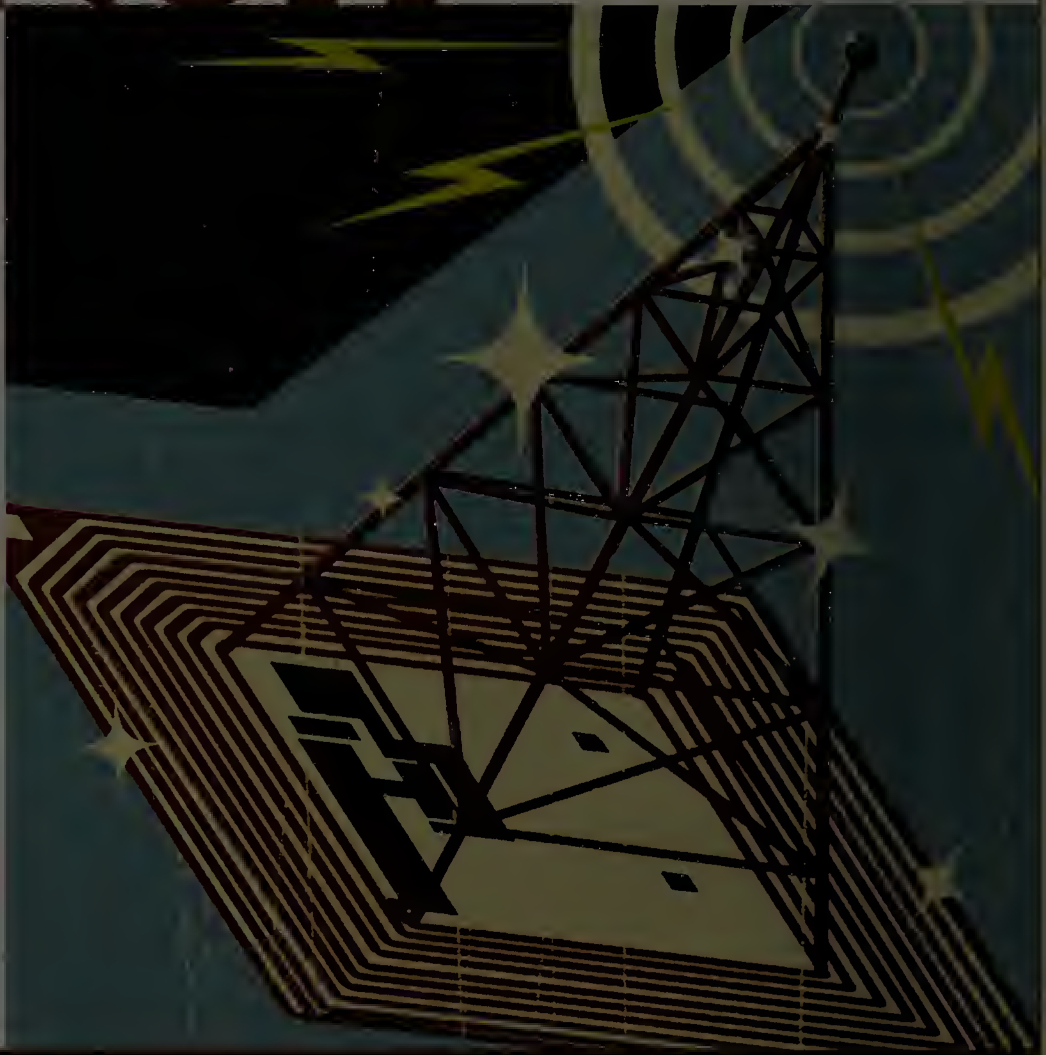
Despite technological progress, serious issues remain, including an almost prohibitive cost (at least for many of the most promising applications), system design unknowns and concerns over reliability and security. Developers are optimistic about RFID's future but remain cautious about its current capabilities.

"If you look at RFID's history, you'll see tremendous amounts of promise and little achievement of those promises … the technology is still immature," says Daniel Engels, director of research for the Massachusetts Institute of Technology's Auto-ID Laboratory. "We are still very much in the overhyped phase. As I talk to people implementing, they are disillusioned with the reality of this technology and that has in many ways slowed the adoption and enthusiasm."

## Expensive option

Most network execs have heard enough of the RFID buzz to understand its ultimate promise. To recap: With RFID, objects are equipped with tiny radio frequency tags that broadcast their identity and whereabouts to strategically stationed readers. With EPCglobal's Electronic Product Code standard, every tag is a unique identifier. As an object passes one reader after another — or even if it stays in one location — it broadcasts its identity and location. This lets a company eliminate manual processes, including scanning bar codes and tracking shipments with paper documents. When RFID is adopted throughout the supply chain, a slew of new material management practices will be born. Lost shipments hiding out in the wrong part of the warehouse

See RFID, page 86



## 9 questions to ask RFID vendors

- What experience do you have in designing RFID systems for my industry?
- How will you design redundancy?
- Do your products support the Gen2 RFID standard? If not, when will they, and what are the migration options?
- What independent testing can you show me that verifies your products can work in the conditions of my warehouse?
- How do your products secure my data?
- Have your products ever been integrated with my ERP system? What work is being done in that area?
- How much do the tags cost?
- How will your system help me analyze the data for long-term trends?
- Using your system, how can I securely share RFID with strategic vendors or customers?

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## RFID

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will be a thing of the past. Keeping an extra 10% of raw materials on hand to cover those lost shipments? Unnecessary. Manual inventory verification? Gone. Real-time stock reordering? Absolutely.

But with tags priced at about $1 each, according to early adopters, the cost of implementing must be weighed against the value of the object being tracked. Item-level tracking — the issue that causes privacy watchdogs to foam at the mouth — is currently unrealistic. A company isn't going to spend $1 to give a unique identifier to items that cost pennies. And until RFID is attached to all those bars of soap and razor blades, the idealistic, self-managing supply chain will have to wait.

That means the happiest of new RFID users are those who are looking to do a better job tracking highly expensive items in mobile situations. Consider Brian Taylor, IT specialist for the King's Daughters Medical Center (KDMC) in Ashland, Ky. Last month, Taylor rolled out an RFID system for tracking devices used in the cardiac, electrophysiology and vascular catheterization labs of KDMC's Heart and Vascular Center.

The system, from Mobile Aspects, consists of three RFID reader-equipped cabinets — each sporting an embedded computer — and an SQL-based application with Crystal Reports module. The system also is linked to the hospital's physical security system. Staff members swipe their identity badges to access supply cabinets. They input patient information and remove the needed gear, all of which is tagged. Items are automatically logged. Plus, the system records who retrieved the item and for which patient. If an item is returned, even to another cabinet, the system records its new whereabouts, Taylor says. In this way, the center always has an accurate inventory and charges patients only for equipment used. The RFID cabinets also track the expiration dates of stocked products.

Because the tracked items cost hundreds to thousands of dollars, such as specialized shunts, internal defibrillator and pacemakers, RFID was a practical choice. "At about $1, the No. 1 problem for us with RFID technology is the cost of tags. We've made the strategic decision of going with higher ticket items," Taylor says. "It wouldn't make sense if we were trying to track $10 items.… Five to 10 years from now, the price will be down to 10 cents a tag, and that will change everything."

### Applications and limitations

Creative vendors, systems integrators and users have begun to find uses for RFID beyond managing inventory (see related story, this page). However, the physical limitations of the technology can be overlooked in all this new-application hoopla. The tags have a maximum broadcast range of about 10 meters, with range affected by factors such as humidity in the air, researchers say. Accuracy, even under laboratory conditions, is never perfect, though vendors such as Texas Instruments and Philips are working on increasing range and reliability. For instance, TI, which makes the inlay chips that power the tags, has been working to refine tag readability so that they are more consistently read across different product SKUs, at different speeds of travel, and so on, says Enu Waktola, marketing manager of retail supply for TI.

But no matter how large the radio range grows, the nature of mobility means that objects will sometimes move out of range, Engles adds. "It doesn't matter if we can reliably do it at 10 meters. We'll want to do it at 10.1 meters, and then we'll get upset if we can't read 100% of tags," he says.

While making an inherently unreliable system dependable is an age-old infrastructure issue, many untested would-be RFID consultants haven't got the experience to do so, industry experts say. Even if the physics are managed, other design quandaries remain.

The pharmaceutical industry is a case in point. The FDA is pressuring distributors and manufacturers to implement RFID technology by 2007. Most major pharmaceutical manufacturers and distributors are exploring pilots. Yet, even a pilot can be hard to design.

"Pharmaceutical manufacturers are faced with some complicated infrastructure questions. One of the most paralyzing factors is how do we institute [a drug's] pedigree? When we start embarking on how we create, transfer and authenticate pedigree, we start talking about massive IT investments and data integration projects all the way down to data construct for the RFID tags themselves," says Dennis Kim, senior manager of supply chain operations for a U.S. drug maker.

Then there are interference issues. For instance, HP wanted to use RFID to track thousands of servers and blades in its internal data centers as they get shuttled around for upgrades and repairs. But first the scientists at HP Labs had to figure out how to keep the metal racks that house the servers from causing too much interference, says Salil Pradhan, chief technologist for RFID technology at HP Labs. The scientists succeeded, but their solution requires specially enhanced readers. Most enterprises don't have the luxury of an internal IT R&D department to re-engineer RFID products.

Pradhan says security is another weak spot. After the tags transmit their data, it becomes ordinary data and can be protected by ordinary security measures. However, little can be done today about an attack that intercepts radio transmissions. Adding encryption to the tags would cause them to grow in size, in energy requirements and, unacceptably, in cost.

But the dangers of interception are overrated, says Paul Strzelec, director of marketing for the EPC network services team at VeriSign. He likens tag broadcasts to a car's license plate. The number isn't secret — the information the number represents is. And that is safely stored in a database. Protecting it requires nothing more than such application security as access control and authentication.

The real danger, he says, is in how companies will protect their proprietary warehouse information from wrongdoers while still sharing it with suppliers and customers to automate the supply chain. To that end, VeriSign offers managed EPC services for naming objects (similar to its DNS service), and for sharing EPC data.

### Network noise

On the upside, data volume is no longer expected to kill your network, as pundits once feared. "I don't think RFID is going to overwhelm IT systems anytime soon. Even if every object gets an RFID tag — 100 billion tags, each read 100 times — 100 billion bytes is not that much data. Compared to video or other files, this is noise," says Pradhan. Moreover, earlier this month Cisco announced an add-on board that will ease integration of RFID traffic onto the data network. (See related story, DocFinder: 9022.) Plus, RFID data aggregation is becoming better understood, so with an appropriate design, your storage systems shouldn't be overloaded either. Tags continuously broadcast information, but that data isn't noteworthy until the tag changes location. Then "all you need to know is that this box came at this time, or left at that time — a high-school kid can write a piece of software to handle that," Pradhan quips.

As for the business analytics software that will mine the data you do store, help is available. It comes in the form of middleware from start-ups such as OATSystems (one of *Network World's* 2005 Start-ups to watch) and stalwarts like Sun's Sun Java Systems RFID and Microsoft's RFID Solutions Architecture, among others. ■

## Top 10 RFID uses

The idea of self-identifying and self-locating objects is irresistible. Here are the top 10 true and unusual RFID uses.

**10** Lauren Scott created a line of children's pajamas embedded with RFID tags so that parents would be alerted if the child tries to leave the house.

**9** RadarGolf invented RFID-tagged golf balls that can be found with a handheld RFID reader.

**8** Avid Identification Systems offers veterinarian RFID systems for tagging livestock and pets.

**7** An Arab sheik tagged his massive jewelry collection.

**6** A cat lover with nine cats, including four look-alikes, reportedly used an RFID tracking system to count how many were in the house.

**5** Researchers in Antarctica have tagged penguins to identify and weigh them as they entered and exited their breeding colony.

**4** The absent-minded professor types at an undisclosed RFID research lab tagged their keys and important paper files so they could locate them quickly.

**3** Japanese elementary school students are checked in and out of the building through tagged backpacks.

**2** A Mississippi casino uses RFID to track its slot machine keys.

**And the No. 1** true and unusual RFID application is at the University of Washington, which tagged 480 trees. Now, trees aren't all that mobile. The tags are used as a part of a "tree tour" in which people move from one tree to another. The tags identify the trees.

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# Soupin' up the bus

## InfiniBand, EtherFabric, iWarp. Which high-speed interconnect will you choose to pump up your net?

BY SANDRA GITTLEN

Simulations of galaxy formations. Complex drug designs. Studying the path of dust clouds. This is just a sampling of the compute-heavy tasks that Phil Williams has to support on his research network at the University of Nottingham, in England.

"The calculations we do are a combination of lots of repetitive serial jobs and highly parallel jobs," Williams says. "Each of these [calculations] takes only a few seconds to occur, but it takes us many, many hundreds of thousands of CPU hours to simulate in a computer."

Despite Gigabit Ethernet connections, Williams' servers — a cluster of 512 dual-processor Network File System-mounted file servers — were getting severely bogged down. "The CPUs were spending all their time handling the connection so that the performance on the job disappeared to nothing," he says. "The interconnect was definitely becoming the limiting factor — it was holding back the amount of data we could calculate."

A trio of high-speed interconnect technologies is aimed at alleviating exactly that kind of strain: veteran technology InfiniBand; newcomer EtherFabric, an Ethernet-based offering from start-up Level 5 Networks; and iWarp, an Ethernet-based technology being put through its paces at the University of New Hampshire (UNH) Interoperability Labs in Durham. All three technologies offload the network connections from the server CPU so that servers can catch up to the network's Gigabit bandwidth speeds. And the buzz on them is picking up as users look for alternatives to 10G Ethernet to handle their growing network loads.

"A push toward sophisticated applications will mean an increase in video over IP, the need for an enriched buying experience over the Web, and the need for improved rendering of images," says Ann MacFarland, a director at The Clipper Group. For IT managers who don't want to make the leap to 10G Ethernet, the combination of big pipes, real-time traffic, heavy computing and burdensome graphics will choke their networks if they don't reconsider their interconnects, she says.

### The infrastructure you have

EtherFabric, a combination of a network interface card (NIC) and software that uses a corporation's current Ethernet switch infrastructure, fit the bill for Williams at the University of Nottingham. EtherFabric gains performance improvement for servers by distributing a TCP/IP software stack to each application on the server. Each application then can directly access memory on the NIC, which alleviates the copying of data to system memory and the over-utilization of CPUs.

"The NIC handles the network so the CPU isn't being hammered by the kernel and being interrupted to handle network traffic," says Williams, who wanted to preserve his investment in Gigabit Ethernet pipes, while achieving high performance and low latency.

Also, because EtherFabric uses standard Ethernet and is interoperable with Ethernet adapters, it only requires one

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ILLUSTRATION: TAVIS COBURN

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**iWarp**

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end of the connection to have the NIC.

University of Nottingham has tripled network performance since implementing EtherFabric, Williams says. "We can do calculations in a third of the time and get three times the work done."

He adds that tripling performance also means "getting away with a third of [his] servers." The university is hoping to revamp its data center, and Williams plans to use EtherFabric to get more CPU power from fewer boxes.

A 10G Ethernet version of the NIC will be available early next year, Level 5 says.

## Betting on InfiniBand

Had Williams not wanted to use Ethernet, InfiniBand would have been a great choice — improving performance even more than EtherFabric, he says. InfiniBand, the high-performance, low-latency fabric overseen by the InfiniBand Trade Association (IBTA), operates at speeds of 2.5G to 120G bit/sec. But the technology falls down for some IT managers because it requires specialized gear.

Aimed at speeding data transfers between huge server and storage farms, InfiniBand comprises a host channel adapter that sits at the server and target channel adapters located in other servers or storage devices. Providing direct connections, the adapters enable efficiency management techniques such as CPU memory offload and QoS to be built in.

InfiniBand launched with a bang in 2000, but interest quickly faded with the economic downturn and ensuing IT budget drawbacks. "During the bust, people were less inclined to invest in new interconnect technologies," says Thad Omura, a member of the IBTA and OpenIB Alliance and director of product marketing at InfiniBand gear maker Mellanox Technologies. But he contends, "now there's a renewal of interest in the interconnect and ability of the interconnect to lower the cost of the data center or high-performance computing."

In fact, heavy hitters such as Intel, Sun and Cisco (which recently acquired InfiniBand switch maker Topspin Communications) support InfiniBand. The technology is taking hold in blade servers, for example, because of its low power requirements (about 2 watts) and 10G bit/sec interconnects.

And users are becoming more plentiful, with compute powerhouses such as the Lawrence Livermore, Los Alamos and Sandia research labs sharing testament to the technology's usefulness.

"InfiniBand started its climb back last year. We're on a good trajectory with a cross-section of industries, including universities, labs, gas, automotive, entertainment and biotechnology," says Stu Aaron, a director of product marketing at Cisco.

Mellanox's Omura says he sees InfiniBand spilling over into enterprise applications that need large computing resources for real-time cost and risk analyses, such as those in financial services, and that require low-latency access to huge databases and storage, such as with Web commerce.

Overall, Omura says the pricing on InfiniBand products is less than its 10G Ethernet counterparts at $300 per port vs. $1,500 per port, but he concedes that it could take a bit more skill to deploy and manage InfiniBand architectures than those based on Ethernet.

## Standards-based choice

While Level 5 and the InfiniBand companies are vying for today's high-speed interconnect market, iWarp might give both a run for their money within the next two years.

IWarp, which stands for Internet Warp, or high-speed Internet, is an umbrella protocol for Remote Direct Memory Access, Remote Direct Data Placement and Marker PDU Alignment. As a bundle, iWarp, like its competitors, is aimed at boosting the speed of networked devices — in this case by reducing the overhead associated with Ethernet. It does this by combining the processing and routing functions on a single chip. "The basic idea is to allow a computer on one end of a connection to write data directly to the memory of another computer without any intervention," says Bob Russell, a member of UNH's Interoperability Lab.

The technology requires a swap-out of NICs on both ends of a connection, but uses the Ethernet infrastructure. "One of the things I like about iWarp is that it is standards-based, while EtherFabric is proprietary," says The Clipper Group's MacFarland.

Backing the iWarp movement are companies such as Broadcom, Chelsio Communications, HP, Network Appliance and Microsoft. However, the technology is not in broad use and devices are in the early stages, Russell says. He adds that widespread deployment could be six months to a year away.

According to MacFarland, iWarp's big benefit is for large data transfers. A complete implementation of iWarp could offload 90% of data transmission overhead from a server's CPU, resulting in latency numbers close to InfiniBand's 1.3 millisec and improved system performance. "It's a much more efficient process than its predecessors," she says.

Unlike InfiniBand, iWarp's barriers to adoption are low, MacFarland says. It is interoperable with most technology in high-performance computing and data centers, such as storage-area networks and network-attached storage.

Russell agrees. "Whether you're moving files or doing backups, iWarp would help," he says. "The big computing shops like the national labs that have supercomputers that are hungry for more power, more speed, they'll jump on iWarp right away."

Experts warn that when iWarp products debut, like the early InfiniBand products, they may be costly. But they point out that as adoption rates grow, the prices will quickly fall into line. ■

## 5 questions to ask concerning interconnects

- Is it compatible with bigger bandwidth — can I move to faster speeds without buying new gear?
- Do the network interface cards have to be on both ends of the connection?
- Can I test-drive it on my hardware in my network running my code and my applications?
- What additional training do I need to deploy and manage this interconnect?
- Is this compatible with Ethernet or will I have to purchase specialized gear?

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# Digging out new rootkits

These attacker tools have become stealthier than ever. Even so, they may not require specialized protection.

BY DEB RADCLIFF

Talk of rootkits, favorite attacker tools for compromising computer systems without detection, has again begun percolating among security experts. The question is, "Why?" Rootkits certainly aren't new — they've been around for more than a decade, first on Unix and now primarily targeting Windows systems. And their purpose hasn't changed much either. They still give attackers root control and a backdoor into the compromised system.

But the latest buzz is how rootkits have become exceptionally stealthy, and now sometimes hide malware and subvert traditional desktop defenses. For example, rootkits found earlier this year by F-Secure's research team on Web servers in Russia were hiding the Masland family of viruses targeted at taking down Web sites operated by Chechen rebels. And the Klog rootkit uses a kernel filter driver to implement keyloggers.

Nobody can say how many computers already are owned by the stealthiest of rootkits. But the number might be surprisingly high, researchers [illegible] given that new rootkits are so hard to detect. Since they have complete control of their hosts, rootkits hide the calls to the operating system that would normally alert security professionals to their presence. Some rootkits [illegible] turn security software off altogether.

"Once a rootkit is in your kernel, it has complete and [illegible] memory and hardware. Hence, all software, including your [illegible] sive technologies, can be subverted," says Greg Hoglund, co-author of *Rootkits: Subverting the Windows Kernel* and owner of rootkit.com.

## Nipping rootkits in the bud

Some security experts see today's stealthier rootkits as another form of malware to be dealt with through traditional means — primarily policy-enforced endpoint security, network anomaly detection and intrusion prevention.

As a first level of protection against rootkits, corporations need to keep endpoint security patched [illegible] up-to-date, particularly on the browser, says Alfred Huger, senior director of engineering for Symantec. This is important, he adds, because rootkits [illegible] on computers and laptops that have touched upon malicious sites. [illegible] malicious sites that use free Web-hosting services, says Websense Security Labs, which in the first half of 2005 tracked more than 2,500 personal sites [illegible] ing malware installers. More than 500 such sites were discovered in the first two weeks of July, WebSense reports.

"The most common and alarming thing we've seen with these backdoors is commercial-related crime, such as credit card theft and identity theft," Huger says. "They're taking advantage of Internet Explorer and Mozilla client-side vulnerabilities to access the system."

Other security experts believe that dealing with today's rootkits requires a [illegible] of looking at what goes on inside a computer that today's [illegible] technologies aren't sophisticated enough to handle. "This is a much bigger problem than anti-virus companies alone can [illegible]," says Alan Paller, research director at the SANS Institute. "By nature, [illegible] are hard to find. The even better ones are harder to find."

## Digging deeper

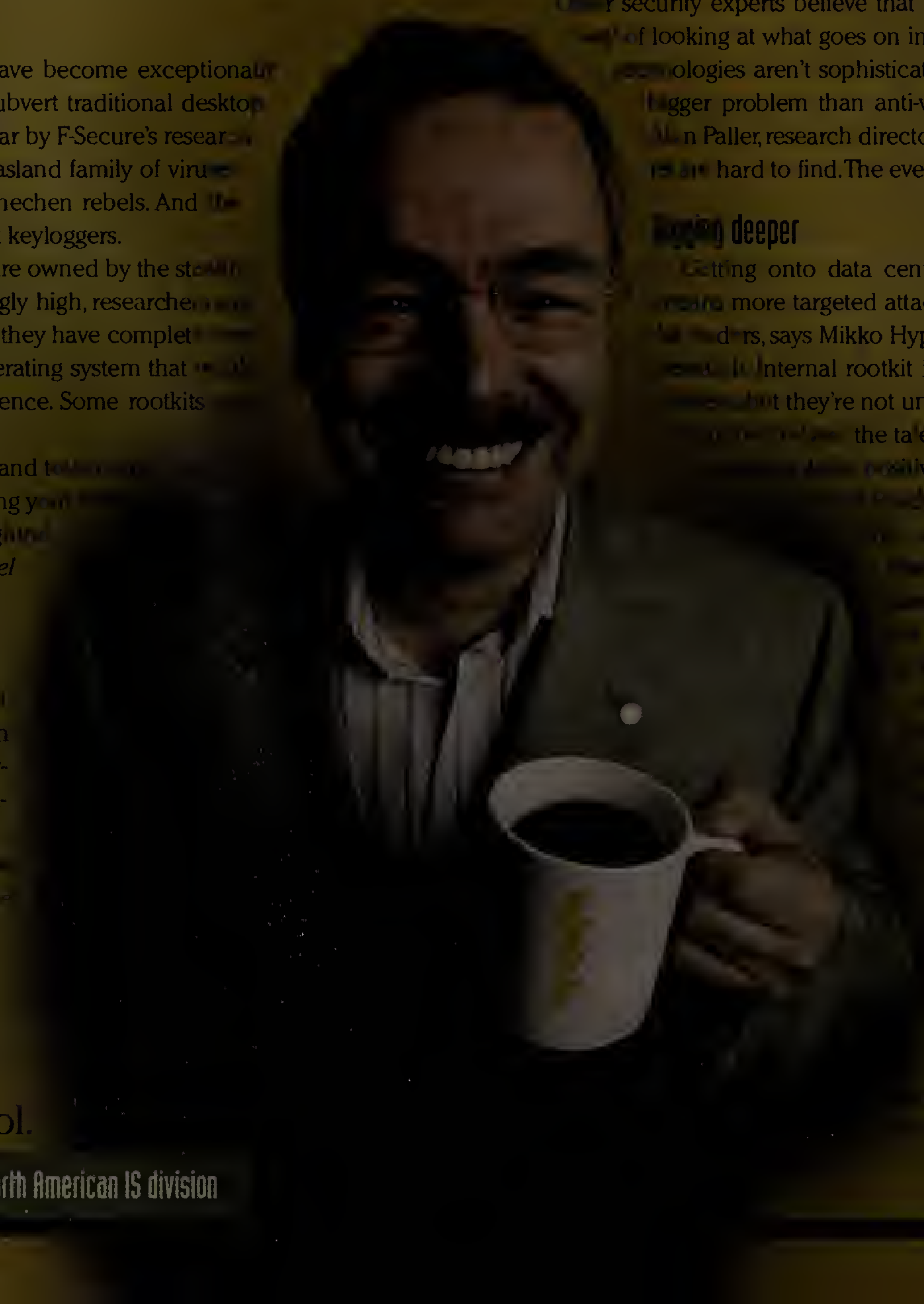
Getting onto data center servers for purposes of [illegible] means more targeted attacks that could require specialized [illegible] ders, says Mikko Hypponen, F-Secure's director of [illegible]. Internal rootkit installations are harder for [illegible] to [illegible] but they're not uncommon, he adds.

[illegible] the tale of an Austrian company that [illegible] positives when using the beta version of [illegible] BlackLight rootkit finder released in March. [illegible] went over the records [illegible] BlackLight found 10 highly suspicious [illegible] on their file server — turned out to [illegible] brand-new rootkit never discovered [illegible] wild before that," he says.

[illegible] of rootkit removal tools [illegible] most used rootkits, including [illegible] Hacker Defender and FU. These [illegible] compare the Windows Task [illegible] process list to the internal [illegible] difference in these [illegible] sign that a rootkit has [illegible] tampered with [illegible] same is true for hidden folders [illegible] keys.

[illegible] with any malware [illegible] rootkit developers and [illegible] are playing a cat-and-mouse [illegible] Black Hat security conference.

See Rootkit, page 9



The best protection against stealth rootkits is the layered, in-depth defenses that savvy IT managers already use — not another specialized security tool.

Pete van de Gohm, director of security, Bayer's North American IS division

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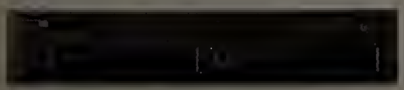

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# Files for ransom

## Ransomware has emerged as the latest security worry. How big is your risk?

ILLUSTRATION: TAVIS COBURN

BY SUSAN SCHAIBLY

As if phishing, pharming and phraud weren't-frustrating enough, the latest cybersecurity threat — ransomware — is an extortion scheme.

Ransomware involves the use of malicious code to hijack user files, encrypt them and then demand payment in exchange for the decryption key. The good news is that documented attacks have been rare. The bad news is that cases are on the rise, says FBI spokesman Paul Bresson.

One of the earliest recorded cases of ransomware was documented by Web-filtering software vendor Websense in May. A call from a panicked user revealed the swiftness and thoroughness of the attack. "All of a sudden, the files on his computer were in a format that was not human readable," says Dan Hubbard, Websense's senior director of security. Only one file — named "Important" — could be read. It contained the filenapper's instructions to send an e-mail to receive the decoder key. When the victim complied, a ransom note demanding $200 arrived. What might have been a malicious prank turned into a serious crime.

### Assessing the risk

Fortunately, most end users only know about ransomware through media reports, not by direct experience. Perry Jarvis, network operations manager for the city of Burbank, is almost cavalier in his assessment of the ransomware risk. "Blocking this type of attack is already being performed by most companies," he says. Before files can be encrypted and then held for ransom, the attacker would have to gain access to the system — and most security professionals already are watching for intrusions and other forms of cyberextortion, he explains. More common than ransomware is a scheme where hackers break into a system — proving they can do it — and then demand payment not to attack. Gaming sites have been hit with this sort of crime, and some accept it as a cost of doing business, paying tens of thousands of dollars a year, according to sources.

Of all the ways a hacker could choose to do damage, ransomware is a fairly high-risk operation, says Gary Morse, president of penetration test company Razorpoint Security Technologies. "There are at least four or five points of contact necessary to pull this off," he says, noting that the criminal has to break into the system, leave malicious code behind, notify the victim, wait for a response, and get paid. Certainly, he adds, if one wants to earn a living through hacking, there are safer ways.

Just because the scheme is high risk, doesn't mean attacks won't dramatically increase or become more sophisticated. Ransomware would become a real danger, Jarvis says, when applied to mission-critical information assets stored on database servers. That, he says, would require almost combat-like planning to pull off.

### Protecting your network

As with most security issues, the best defense is a good offense. Although cyberextortion attacks can be carried out through traditional channels, such as e-mail attachments or direct access to the network, most instances are browser-based.

In the Websense case, for example, a forensic investigation revealed that someone at the targeted company had visited a

**See Ransomware, page 96**

## 6 questions to ask concerning ransomware

- Do you have any experience in detecting or disarming ransomware attacks?
- Can you offer protection against security attacks that occur quickly? (A variety of attacks can be performed at more than 1 million packets per second.)
- If my company comes under a ransomware attack, how might you be able to help me quickly decrypt the affected files?
- Once a vulnerability is found, how long do you typically take to distribute a patch?
- If I suspect a thwarted ransomware attack, how should I report it to you, and how will you inform the authorities while protecting my confidential information?
- What kinds of innovative technologies do you offer to battle dangers such as Trojan horses and key loggers that work through the Web and often go undetected by — or can even disable — anti-virus software?

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## SOBA

continued from page 76

cases, the actual term. According to Gartner, the big four vendors driving toward SOBA are SAP, with its NetWeaver platform; Oracle, with its Platform Fusion; IBM Global Services, with its Services Oriented Modeling and Architecture; and Microsoft, which is retooling its infrastructure with a Web services middleware called Windows Communication Foundation slated to ship in the next two years.

Vendors such as Webify, with its SOBA Fabric and SOBA Suites software, are betting on the concept and adopting the terminology.

SOBA makes sense for Fireman's Fund Insurance, which is using Webify's SOBA Fabric to create a catalog of services. Today, the company has a simple billing inquiry system that is a first step toward its goal of supporting complex transactions, such as loss notification or quote generation, using SOBAs that include error checking and transactional rules.

"We have been able to borrow a lot from our experience trying to do component-based development and from our object-oriented days," says Roger Cottman, IT product director for the Novato, Calif., company. "We have lots of initiatives underway to leverage this [SOBA] technology, but the level and depth to which we can apply these concepts, we just don't know yet." ■

## Rootkit

continued from page 92

for example, developers announced Shadow Walker, a new hiding technique that can be located only if rootkit detectors upgrade their processes to check whether memory or page fault handlers have been replaced, Hypponen says.

That throws the usefulness of specialized rootkit defenders into question, at least for Pete van de Gohm, director of security for Bayer's North American IS division in Pittsburgh. For now, he says, the best protection against stealth rootkits is the layered, in-depth defenses that savvy IT managers already use.

"Know and understand what's normal for your network. Look at your access points, and figure out which is the best way to mitigate blended threats," van de Gohm says. "For example, it's pretty easy to tell when your Web server has become an FTP server if you just watch your traffic."

As "Mudg," a division scientist at BBN Technologies pointed out during a morning security "rant" session at the recent DefCon hacker conference, all networks follow the same laws of physics. For example, servers don't normally initiate calls; they just serve. Desktops don't normally talk to each other. Packets don't travel fragmented and out of order across the network. Obviously, he concludes, "These are all signs of trouble."

*Radcliff (www.debradcliff.com) is a freelance writer specializing in online safety and network security.*

### Rootkit resources

Go online for links to rootkit detectors, defenders and white papers. www.nww.com; **DocFinder: 8531.**

### 6 questions to ask rootkit vendors

- Which of the following detection algorithms is used?
  - ● The cross-view approach (detects hidden objects to indicate a rokit has been embedded).
  - ● Direct rootkit detectors (catches hooked entries into IDT/SDT/IRP).
  - ● Signature-based approach.
- Does the rootkit defender combine cross-view detection with heuristics-based file analysis? (So far, no tools do both, but they should.)
- Can the tool detect the rootkit at time of installation?
- Does work have to be stopped for a full scan of the machine to detect the rootkit? How long does that take? How often should you scan?
- Does the technology detect kernel, memory, bios and/or user mode rootkits?
- Can the tool automatically remove the rootkit? Often rootkit removal requires booting into safe mode and then manually cleaning.

## Ransomware

continued from page 94

Web site that had been hacked. The site spread its malicious code through an Internet Explorer vulnerability. A Trojan horse was dropped on to the victim's network and searched all of the system directories and mapped drives. The program encrypted the files, left the ransom note and deleted itself.

On a positive note, special "ransomware" products are not necessary, nor are vendors particularly marketing themselves in that vein. Instead, making sure every user device that sports a browser has the latest patches is the first and most obvious protection. The multiple layers of security that the typical corporation already has in place — firewalls, anti-virus, intrusion detection, Web monitoring and so on — will most likely stop the malware before it infects the network, says Robert Rosen, CIO for the National Institute of Arthritis of Musculoskeletal and Skin Diseases, in Bethesda, Md., and president of the IBM users' group, Share. "Ransomware uses all the same vulnerabilities we already know about. We just haven't fixed them yet," he says.

Razorpoint's Morse agrees. Cybercriminals intent on extortion attacks might exploit a firm's negligence. "Sometimes people aren't minding the store the way they should be," he says.

Even so, the increase in browser-based attacks points to another hard truth for many companies — their employees are their biggest security liability. "The employees are the ones who are going to open the back door" and let in the malware, Rosen says.

If an accounts receivable manager receives a demand for ransom, will he know what to do? For end users, Rosen says, playing the "What if?" game is important. The best chance of preventing panic is to give employees clear instructions about responding to these kinds of threats. "We've spent a lot of time and effort trying to educate people here about the threats, and it clearly works," he adds.

### No one knows

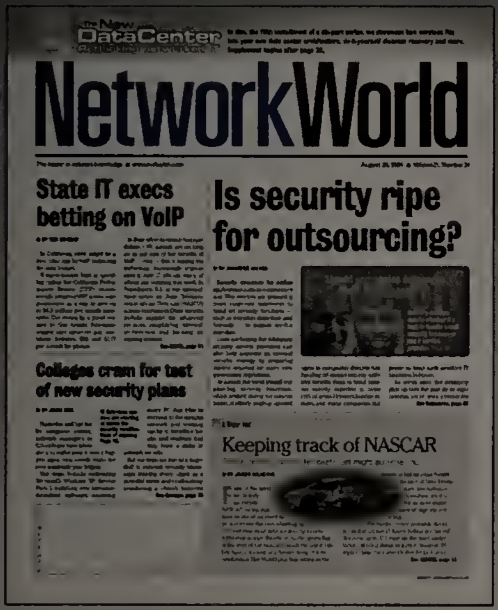
The extortionist wannabe who attacked Websense's client never did get the ransom. Websense was able to reverse-engineer the malicious coding and decrypt the nabbed files without money changing hands.

But the incident established a frightening precedent. No one knows how many ransomware attacks there have been. Websense hasn't received any additional reports, and Symantec reports seeing only three or four variants of the scheme. Renaud Bidou, a security consultant for Radware, an application security provider, has encountered about a half-dozen incidents since October 2004.

But, like victims of any security incident, those targeted by ransomware tend to keep quiet about it, especially if they've ponied up and paid. Admitting that, Bidou says, is like announcing, "Hey! Attack me — I pay!"

Still, you can protect yourself. Filenappers can't demand a ransom if they don't have control of your network.

*Schaibly is a freelance writer in Fort Collins, Colo. She can be reached at sschaibly@aol.com.*



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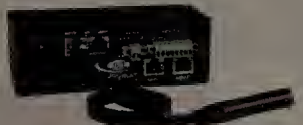

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Three more technologies percolating up in the industry.

# Keep the buzz on

### BY PAUL KORZENIOWSKI

## 1 Near Field Communication: Secure mobile commerce

Add Near Field Communication to your list of what to know about wireless communications. NFC, the brainchild of Royal Philips Electronics and Sony, promises to be a safer, more affordable option than competing close-range wireless options.

Equipment vendors and wireless network service providers see a number of advantages in using NFC for information exchanges. NFC, which supports transmission speeds up to 212K bit/sec, is inexpensive, costing 10 to 20 times less than alternatives, and requires one-half to one-third as much power as options such as Bluetooth and Wi-Fi. And best of all, NFC has a transmission range of only a few feet, which makes it difficult — some would say impossible — for intruders to tap into.

While a number of NFC trials are underway in Asia, a group of about 50 diverse vendors, including MasterCard International, Microsoft, Motorola and Visa International, have formed the NFC Forum to promote the technology. The group is focusing on NFC's ability to authorize e-commerce payments in devices such as mobile phones, digital cameras and game consoles. In effect, these devices will function like credit or debit cards and offer users one more way to buy products and services.

"NFC could play an important role in helping vendors realize the promise of mobile commerce," says Allen Nogee, wireless technology analyst at In-Stat/MDR.

## 2 Podcasting: An enterprise challenge

After plunking down the cash for an iPod — and Apple reports that more than 20 million people have done so — consumers are often quite open to putting the device to novel use. Consequently, determining what is growing faster has become difficult: iPod acceptance, which Apple says has seen more than 500% annual growth in shipments, or the cottage industries that have sprung up around it.

The latest rage is podcasting; market research firm The Diffusion Group expects the number of U.S. consumers who engage in podcasting to grow from 4.5 million in 2005 to 56.8 million in 2010.

With podcasting, if users miss their favorite radio programs, they can later download the broadcasts down their iPods — or other MP3 player — as Really Simple Syndication files, an XML variation designed to aggregate news feeds. Public Radio International's Christopher Lydon is one radio host who podcasts his show, while Stephen Downes, a senior researcher at Canada's National Research Center, uses the technology to augment his blog, as do many others. "Most Web sites already put their content in MP3 format, so tweaking it for podcasting is a simple process," says Mike McGuire, a Gartner research director.

In June 2005, Apple blessed podcasting with the announcement of its iTunes Podcasting Directory and then delivered more than 1 million podcasts to customers in two days. "Eventually, all mainstream media organizations will view podcasting as one of their necessary distribution channels," says Marc Freedman, an analyst with The Diffusion Group.

Network executives who haven't yet thought about the technology's potential affect on the corporate backbone ought to do so soon. Corporate-use policies should take the popular application into account, and bandwidth consumption should be monitored.

## 3 ZigBee: Smarts for sensor nets

Success of the standards-based Wi-Fi is having a major affect on the design of sensors used in devices such as light switches, fire and smoke detectors, thermostats, and appliances. Vendors have eschewed the traditional proprietary networks for collecting performance data from these products in favor of a standards-based approach. A group of more than 100 vendors has developed the ZigBee standard, allowing sensors to transfer information in a standard manner.

ZigBee has been a while in coming. About four years ago, sensor device suppliers looked at their options for a standard network. Unlike enterprise and even home networks, sensor networks transmit small volumes of simple data — for instance, is a light on or off? They ruled out popular Wi-Fi 802.11 standards as too complex, delivering more bandwidth than needed, and difficult to manage. They nixed infrared technologies used for home security systems because they need a clear line of sight to communicate, which is not always present. Bluetooth was the most likely possibility, but they also deemed it too complex and expensive.

Signature SIGN-OFF

So the vendors developed ZigBee, which operates in the 2.4-GHz radio band — the same one used by Wi-Fi systems, microwave ovens and cordless phones. The standard supports data transmission at rates up to 250K bit/sec at ranges from 30 to 200 feet. The specification supports a mesh network connecting up to 65,000 network nodes.

Once deployed, ZigBee networks can perform various maintenance functions, such as collecting information from smoke detectors. "Because ZigBee provides sensor vendors with a simple, inexpensive way to transfer information, novel ways of taking advantage of the technology are starting to emerge," says Glen Allmendinger, president of Harbor Research, which expects the number of ZigBee-compliant nodes to increase from 200,000 in 2004 to 100 million in 2008. Those numbers translate into another successful network standard.

*Korzeniowski is a freelance writer in Sudbury, Mass., specializing in technology issues. He can be reached at paulkorzen@aol.com.*

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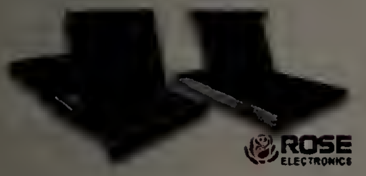

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**E-MAIL NEWSLETTER SHOWCASE: WIRELESS IN THE ENTERPRISE**

# Cisco builds network foundation for RFID

**BY JOANIE WEXLER**

This month, the first fruit of Cisco's Application-Oriented Networking initiative, which aims to couple applications with network infrastructure to deliver network-wide application interoperability, bloomed. It is a network-centric RFID endeavor.

The first goal of AON for RFID, to ship in October, is to scale RFID deployments farther, more easily and less expensively than the traditional approach of connecting RFID to host computers via serial ports to support dedicated applications. In the Cisco RFID architecture, RFID readers, which pull identifying information from tags affixed to assets over the air so they can ultimately be viewed by upstream applications, become Ethernet-attached. They communicate with RFID-aware blades, or modules, in Cisco Integrated Services Routers and data center Catalyst 6500 switches.

The blades contain Cisco-developed AON software and RFID middleware software from Cisco partner ConnecTerra. ConnecTerra makes software that complies with the EPCglobal industry-standard Application Level Events interface, a software standard through which an application can indicate what information it wants from a raw stream of RFID data.

Combined, the companies' software performs the following functions, among others, says Chris Wiborg, solutions product manager in Cisco's AON business unit:

- Filters RFID traffic exiting readers so each tag is read just once.
- Helps prevent readers from interfering with one another so the right tags are being read.
- Checks to ensure that items shipping are the items being requested.
- Virtualizes requests using load balancing to ensure high availability of fulfilling RFID requests.

Cisco seems to be bundling some simple applications into the AON blades. At the EPCglobal Global U.S. Global Conference last week, it demonstrated a tag reading indicating a piece of merchandise not having been paid for, which triggered an IP telephony application within the blade to place an IP video phone call to a security guard.

Readers from Intermec and ThingMagic and tags from PanGo are certified for interoperability with the AON blades, Wiborg says, though they must be procured from their respective vendors.

*Wexler is an independent networking technology writer/editor in Silicon Valley. She can be reached at joanie@jwexler.com.*

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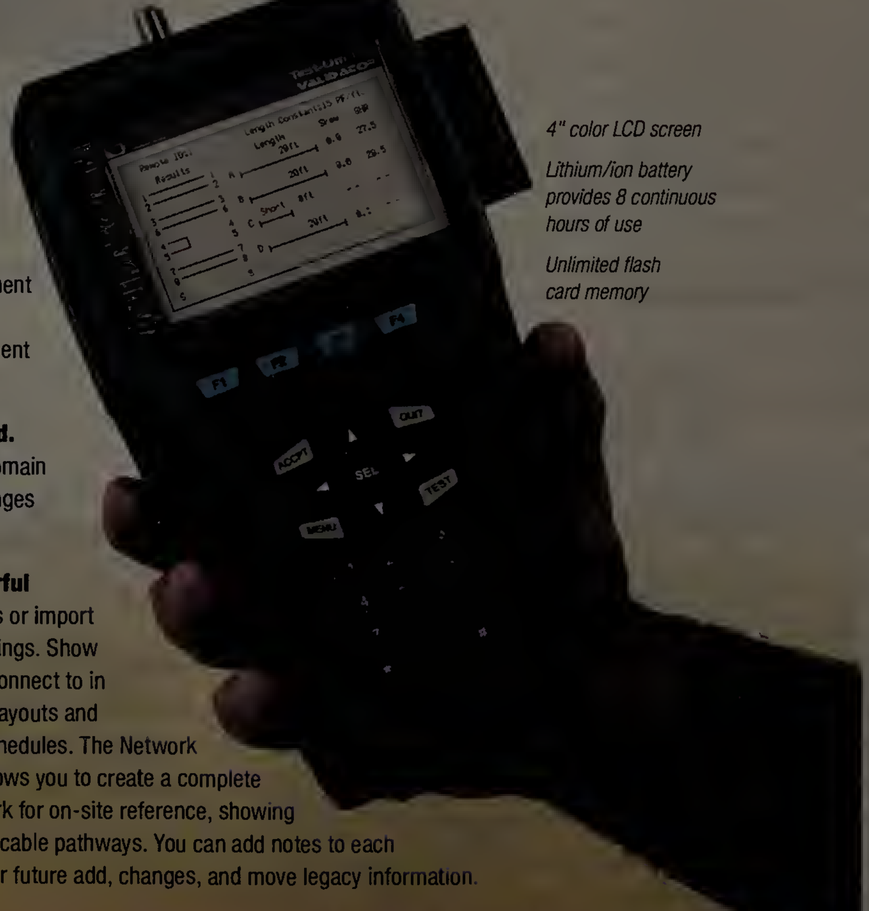

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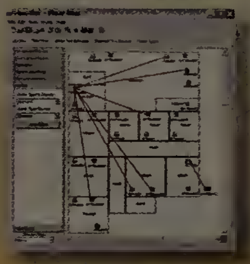
**IDENTIFY active components of your network on the other end of the cable.** Identify all types of equipment and port service discovery with advertised speed ratings and DHCP negotiation. Access IP addresses, ping equipment and flash hubs/switches for positive port location.

**CONFIGURE links between nodes at Gigabit speed.** Check IP addresses on netmask, Gateway/routers and domain name servers. Confirm links between equipment for changes or upgrades.

**DOCUMENT the network with the included powerful Plan-Um™ software.** Create layouts of offices/premises or import existing Visio/AutoCAD drawings. Show cables and equipment they connect to in physical locations. Print out layouts and corresponding Cable Test Schedules. The Network Tool section of Plan-Um™ allows you to create a complete topology layout of the network for on-site reference, showing connections, equipment and cable pathways. You can add notes to each component of the network for future add, changes, and move legacy information.



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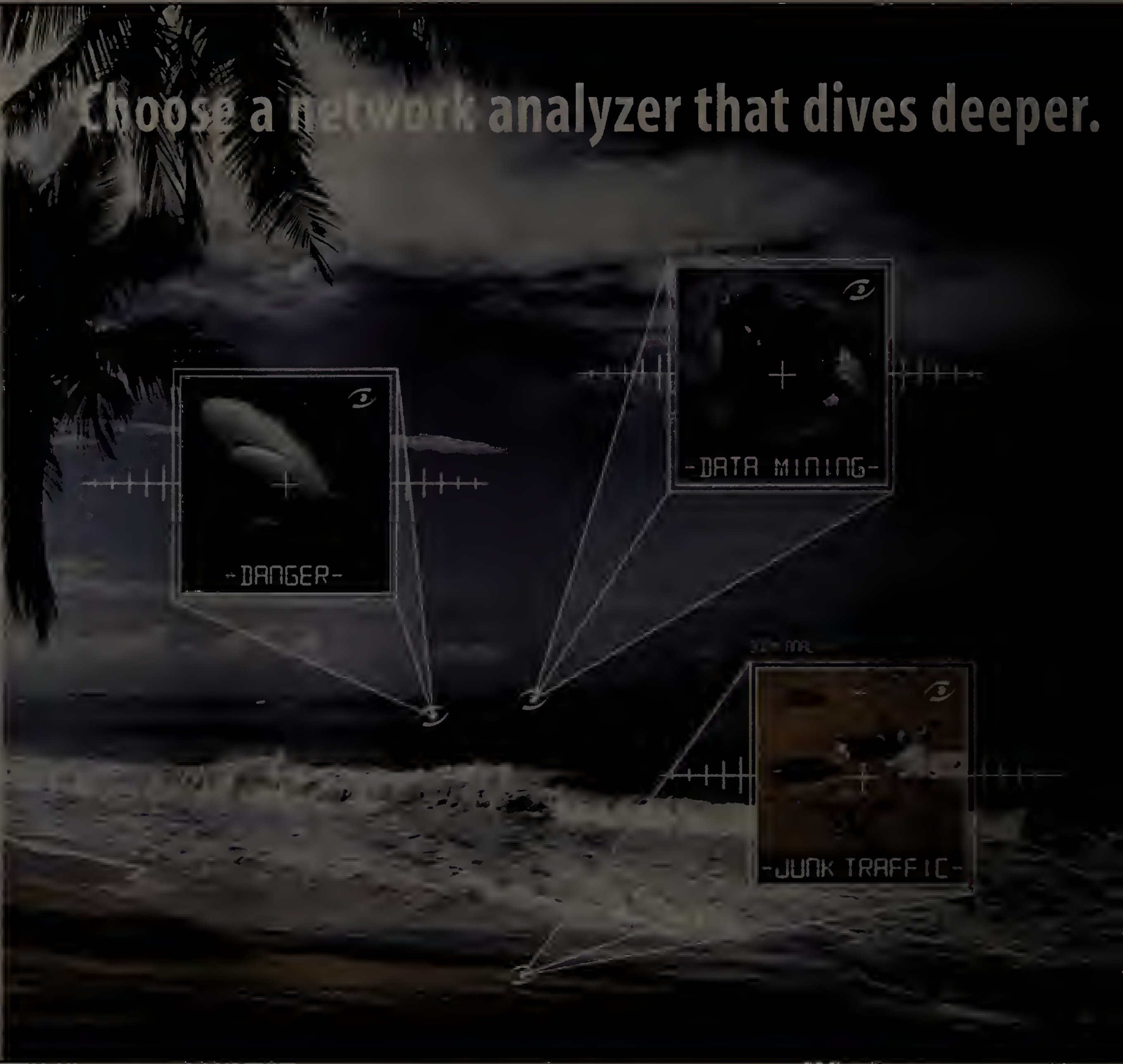

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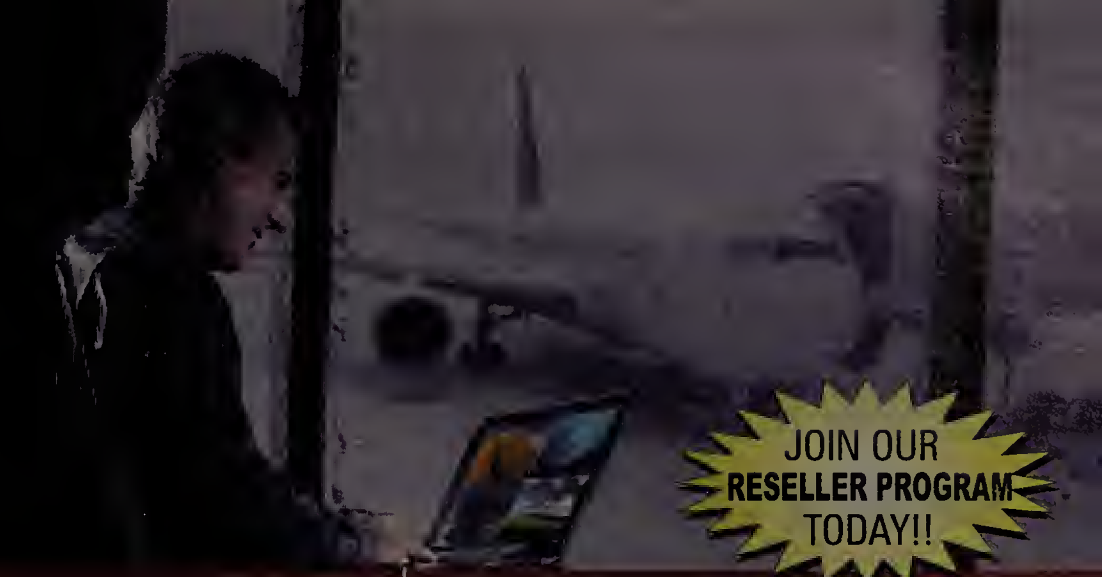

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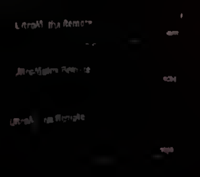
## KVM OVER IP



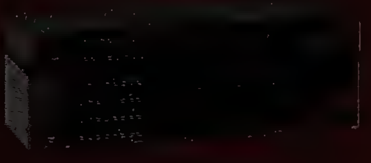
### MATRIX KVM SWITCH WITH INTEGRATED REMOTE ACCESS OVER IP

- System-wide connectivity over IP worldwide and locally
- Connects 1,000 computers to up to 256 user stations
- Supports PC, Sun, Apple, USB, UNIX, serial devices
- High quality video up to 1280 x 1024
- Secure encrypted operation
- View real-time video from 4 computer connections with quad-screen mode

The UltraMatrix Remote represents the next generation in KVM switches with IP access. It provides a comprehensive solution for remote server access over IP and local access as well.

**UltraMatrix™ E-series**

## KVM SWITCH



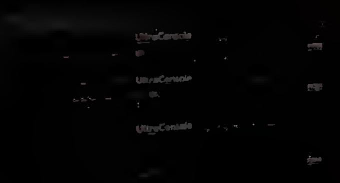
### PROFESSIONAL MULTI-USER KVM SWITCH 2 - 4 KVM STATIONS TO 1,000s OF COMPUTERS

- PC or multi-platform ( PC/Unix, Sun, Apple, others)
- On-screen menu informs you of connection status between units in an expanded system
- Powerful, expandable, low cost
- No need to power down most servers to install
- Security features prevent unauthorized access
- Free lifetime upgrade of firmware
- Video resolution up to 1600 x 1280
- Available in several models
- Easy to expand

The UltraMatrix E-Series represents the latest in KVM matrix switch technolog, at an affordable price. The E-Series allows you to connect up to 256 user stations to as many as 1,000 computers. The UltraMatrix E-Series is available in several sizes: 2x4, 2x8, 2x16, 4x4, 4x8, 4x16, 1x8, and 1x16in either PC or multi- platform.

**UltraConsole™**

## KVM SWITCH



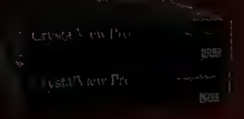
### SINGLE USER & MULTI-PLATFORM KVM SWITCH 1 KVM STATION TO 1,000s OF COMPUTERS

- Supports PC, Sun, UNIX, Linux, USB, and serial devices
- Supports serial devices such as routers and emulates VT100/220 terminals
- Plug-in expansion cards allow the system to easily be expanded as the system grows
- An expanded system can connect up to 1,000 computers to a console user station
- Powerful and expandable, yet low cost
- Video resolution up to 1600 x 1280
- On-screen menu informs you of connection status between units in an expanded system
- Multi-lingual Menu (English, French, German, Spanish, Italian, Portuguese)

The UltraConsole represents the latest in KVM switching technology at affordable prices. The UltraConsole allows for a central user station to connect to four, eight, or sixteen computers per chassis, expandable to as many as 1,000 computers, servers, or serial devices.

**CrystalView Pro™**

## EXTENDER OVER FIBER



### DVI/VGA DIGITAL KVM EXTENDER OVER FIBER

- DVI and VGA video modes
  - PC and USB
  - PS/2 and USB keyboards and mouse
  - Full stereo audio (optional)
  - Serial (optional)
- Ethernet 10BaseT Network management (optional)
- Extend a KVM station from a CPU using fiber cable:
  - (MultiMode) 62.5-micron cable up to 650 ft
  - (MultiMode) 50-micron cable up to 1,300 ft
  - (SingleMode) 9-micron cable up to 33,000 ft (6 miles)
- Video resolution up to 1600 x 1200
- Flexible modular architecture

The CrystalView Pro fiber is the KVM extender of choice for businesses that need to extend and operate a computer, server, or KVM switch from a great distance.
The CrystalView Pro fiber makes this possible with the use of standard fiber optic cable. You can fully operate and control a computer or server from as far away as 33,000 feet using 9-micron fiber cable (SingleMode)

### KVM RACK DRAWERS WITH KVM SWITCH OPTION

RackViews offer the latest, most efficient way to organize and streamline your server rooms and multiple computers.

The RackView is a rack mountable KVM console neatly fitted in a compact pull-out drawer. This easy-glide KVM drawer contains a high-resolution TFT/LCD monitor, a tactile keyboard, and a high-resolution touchpad or optical mouse.

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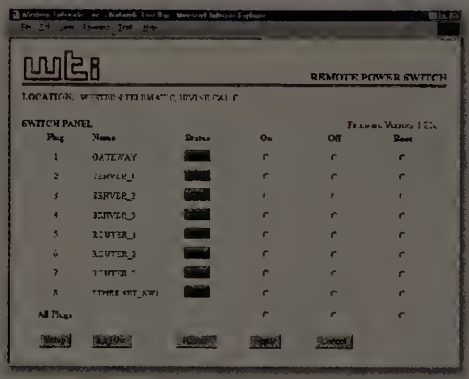
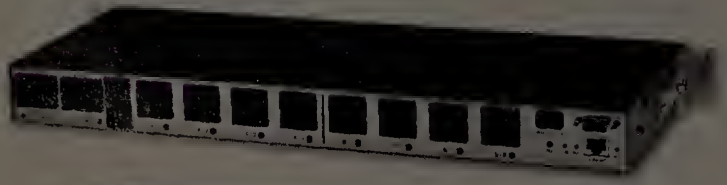
- Network Security Features
- Power-Up Sequencing

Web Browser Interface





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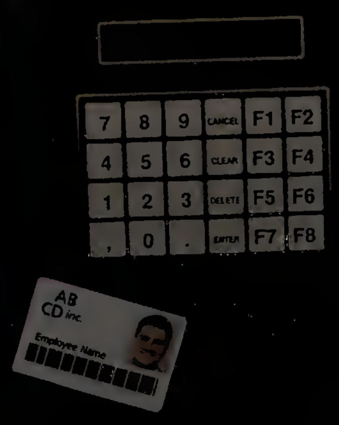

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## Aluminum Cabinets provide protection against dust, moisture, and EMI

The new Form 4 range of rugged aluminum cabinets from Optima EPS has been designed to provide reliable protection to UL-508 Type 12 specifications, as well as offering options for up to 100dB of EMI attenuation. The cabinets are easily customized to suit the required height, depth, and width, including 19" and 24" widths

The combination of Nema 12 protection and RFI shielding in a low weight cabinet makes the Form 4 cabinet suitable for a wide range of applications, such as computer simulation, test and measurement, industrial control, and computer storage installation. For maximum flexibility, the reinforced doors are field-reversible and open 122 degrees for access, with concealed hinges and multipoint locking for security and clean lines.

## We deliver customized 19-inch cabinets in just 2 weeks

Every electronic system is different, so its not surprising that standard 19-inch cabinets don't always offer the ideal system packaging. That's why Optima has introduced the Custom Cabinet 14 service: customized cabinets delivered to your door in just 14 days.

You decide where you want the holes and handles. How many shelves you need. Where the doors should be. And what accessories you want. Then we put it together - fast.

So, with the Optima EPS Custom Cabinet 14 service, you don't have to keep space hungry, expensive inventory, because your ideal cabinet is just 2 weeks away.

## Wall-mount swing frame suits both electrical wiring and 19" electronic equipment applications.

Optima EPS announces the launch of a versatile range of wall-mount swing frame cabinets, designed to suit both electrical wiring and electronics applications. Locks to the rugged front and rear doors permit the whole frame to clear the wall to simplify installation and maintenance for electrical contractors and manufacturing, instrumentation, and automation applications. The Frame is designed to accept standard 19" racks and fittings, as well as electrical components, and is available in a range of colors and six standard sizes from 23" x 14" to 48" x 20".

## Cabinet Passes NEBS Level 4

This range of 19" and 24" wide cabinets use welded aluminum construction to provide lower weight NEBS compliance for seismic regions. Heavy-duty-aluminum extrusions are combined with seven-guage steel base to provide a rugged floor-mounting design able to resist shock, bending and vibration stresses. The cabinets are designed for deployment in earthquake-prone areas to Zone 4, and comply with Belcore TR-63/ANSI 329, suiting applications in defence, rack-mount computers, manufacturing, and telecom.

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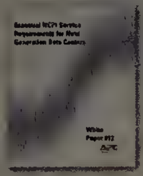
# We just spent almost $70 million researching solutions to tomorrow's server problems



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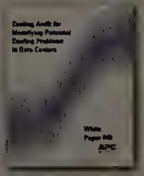

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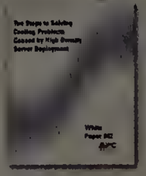

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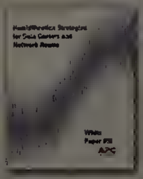

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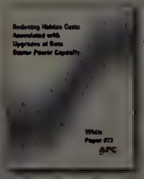

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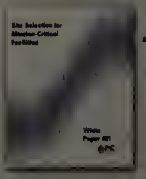

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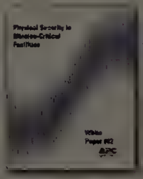

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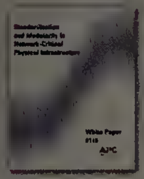

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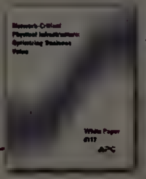

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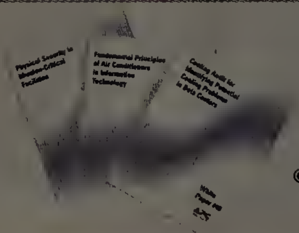

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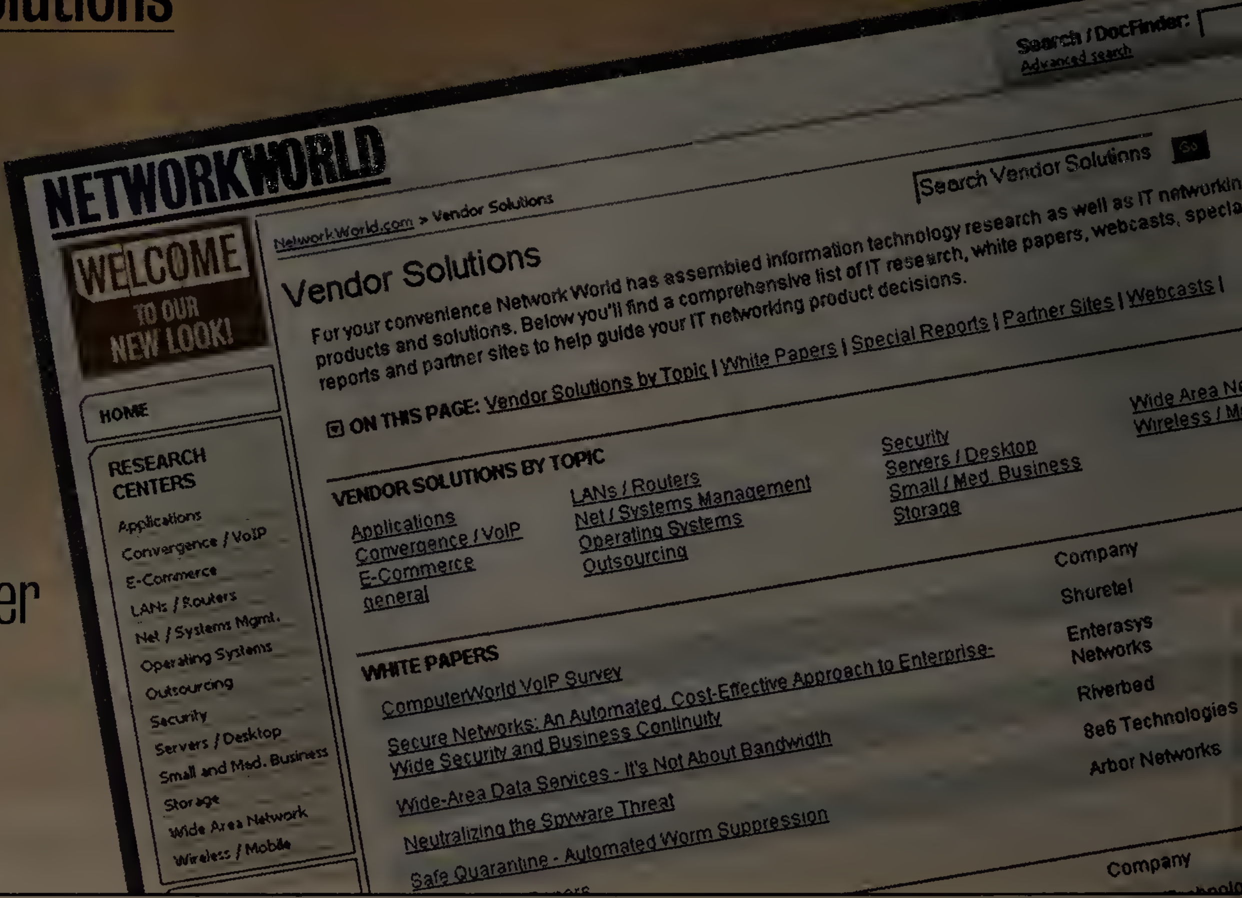

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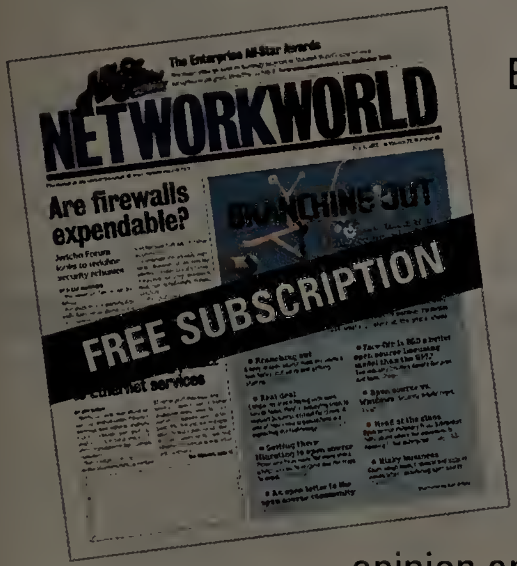

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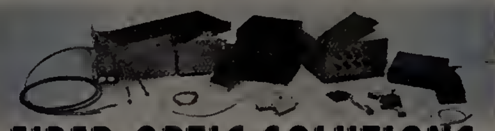

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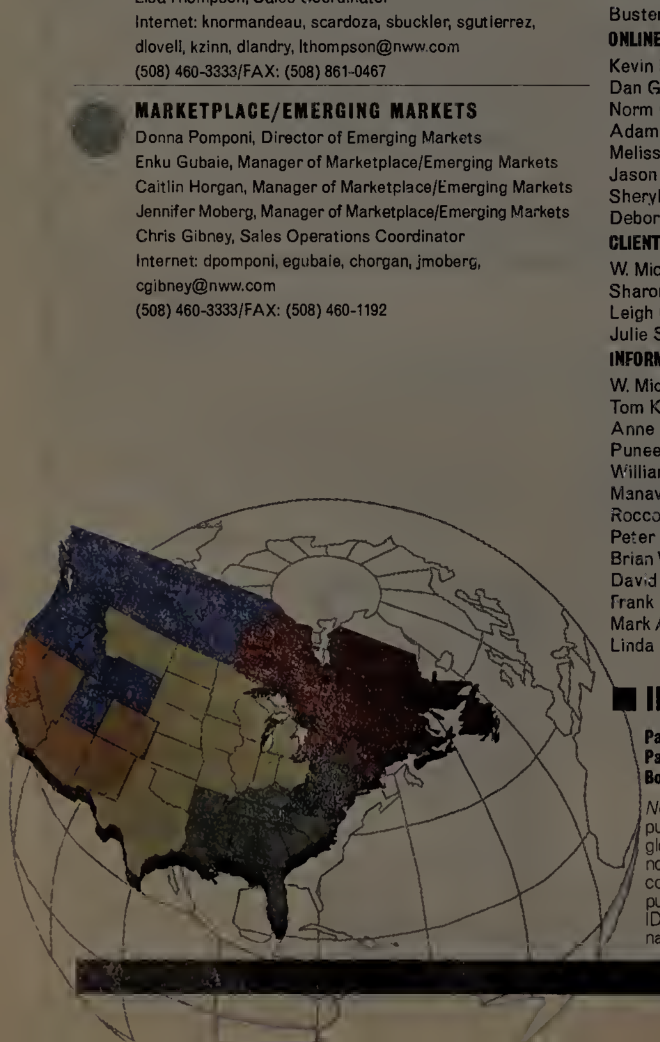

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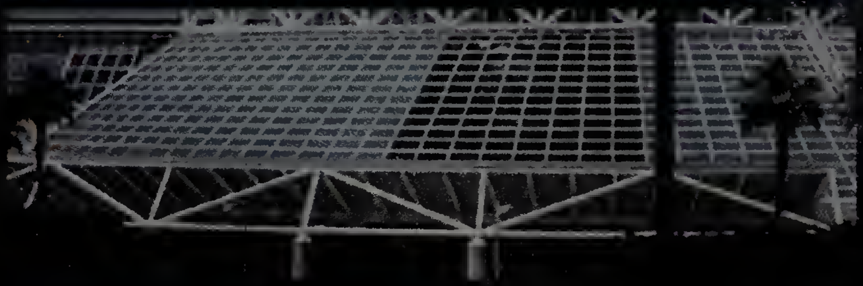

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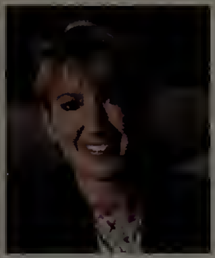

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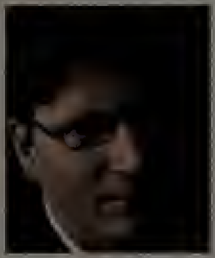

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**BACKSPIN** Mark Gibbs

# The truth about IT

We all love IT. Even though some of us might not like our jobs, it is next to impossible to be in the IT world without having some kind of passion about the whole idea of working with computers and information.

It's the smell of computers. Tell me that there isn't something unique and breathtaking about a serious computer room. That drone of air conditioning, the tension in the air from all that power, the sheer magic of hundreds of cables and thousands of blinking lights.

More than that, it is the sheer intellectual rush of building systems that can make people productive and companies competitive. It is a challenge that rivals the greatest architectural achievements of, say, the Renaissance. Flying buttresses made of nothing but stone that can stand for centuries, pah! Show me an object-oriented database with a natural language interface that services 10,000 users in real time and I'll be impressed.

But there's also a dark side. That's the crazy hours, the stress of trying to solve supremely complex problems in too little time with too few resources, the frustration of trying to explain how computers work to people who just want to get their job done and don't care how their computers work and blame you for them having to know something about computers so that they can do their job.

So, here's the truth about IT:

**1.** There is nothing but IT. The world has only just begun to get it and as new employees enter your corporations things will get easier because these people grew up with a clue about IT. But by the time everyone is with the program you will be retired, insane or dead. Or all three.

**2.** We don't really know how to do IT yet. Despite all the technology we've accumulated and all the techniques and practices we have developed, no one really knows how it should all work. We'll keep trying, and we'll keep getting better, but as fast, as evolutionary and as revolutionary as our progress will seem, it will always be behind what we will need. As much technology as we develop, there will always be more information than we can handle.

**3.** We have no control over what IT can achieve. We can achieve in IT only what the major players in our industry will let us achieve. It is all about money. If Microsoft, Oracle and Siebel really cared about engineering, we'd be a lot further down the road to building really successful, reliable, durable, secure systems than we are. Why else would there be such a high failure rate in the implementation of ERP, CRM, customer management system and other large-scale systems?

**4.** The Free Market owns IT. Yep, it's a free market, and the lure of profit and the need to keep the shareholders happy have and will continue to make the greed of the vendors and the gullibility of the buyers crucial driving forces. For vendors, greed makes it easy to push out the door systems that are "good enough." Not adequate, mind you, just "good enough" to get it to the customer and collect a fee. And of course the buyers are sitting ducks; they are all too often desperate to believe the fairy tales.

**5.** Security is a pipe dream. I suppose it is possible that we could design truly secure systems, but in reality we don't seem to get around to it and don't want to pay for it. We're too busy trying to get the next big thing out the door. The bottom line is that we don't really care.

**6.** We always try to move faster in IT than common sense tells us we can. It is no secret that lots of bad decisions are made in the name of getting an edge, of owning the first-mover advantage, but that's all an illusion. If you don't really control your technology and it isn't really secure and it costs an arm and a leg to keep it running, that first-mover advantage is really just a millstone around the corporate neck.

So there you are. The truth about IT. Grim and gritty. Full of insurmountable barriers, frustration, sweat and toil relieved only by the occasional but incontrovertible realization that you have built something that works and works as you wanted it to.

Who would work in any other business?

*Confessions to backspin@gibbs.com. P.S. Check out Gearblog (www.networkworld.com/weblogs/gearblog).*

**Paul McNamara**

## NETBUZZ News, insights, opinions and oddities

### The word from DemoFall

Six minutes is all a company gets to make an impression onstage at DemoFall, so snap judgments are the order of the day for attendees. What follows are a few of mine from last week's show in Huntington Beach, Calif. — starting with the work stuff and finishing up with a few fun entries.

Start-up Teneros has taken to heart the three most-dreaded words in any workplace: "E-mail is down." The company's first of a series of Application Continuity Appliances provides instant failover for Microsoft Exchange Servers during planned or unplanned downtime. Teneros promises a 10-minute installation, zero upkeep and no monkeying with your Exchange Server — for $15,000. Problem solved.

Sana Security is looking to end the rat race that is signature-based malware protection by offering an interesting alternative called Primary Response that identifies the nasty stuff based on how the code acts. Anything that flunks the duck test is automatically killed and removed. False positives — some server programs and even anti-virus software can trip it up — are handled with a white list. A stand-alone version is expected to be available in December for $30 to $40, with a managed version for enterprise networks following next year.

Gaining control over instant messaging use in your organization can be harder than trying to tackle a Coke machine. The Barracuda IM firewall from Barracuda Networks brings a gang-tackling approach to the task by offering an all-in-one IM server and gateway filtering product. Not only does the combo provide an in-house IM standard, it gives IT impressively detailed control over the intrusion and abuse of public IM services. Reporting features will help with regulatory compliance . . . and goose your company's goof-offs.

The next two won't exactly be welcomed like found money in many an IT shop, but users are going to love them.

U3 was onstage touting a variety of new licensing relationships that are bound to bring scads more of its souped-up USB "smart drives" into workplaces — at least those that aren't actively blocking such devices. These products are moving beyond file transfer and backup to now allowing you to bring your critical applications home or on vacation. All kinds of security options and add-on applications for the devices were shown. (The latter included Party Poker, a personal 'Net Buzz favorite but not often found on lists of approved corporate applications.)

The Mobile Personal Server from Realm Systems looks as though it may have an easier time calming the concerns of IT security pros. Slightly bigger than a deck of cards, the device also plugs in to any USB port but trumps the key-chain cousins by giving mobile users secure access to all authorized applications and data they would have back at the office. Biometric authentication coupled with back-end control offered by the accompanying Realm Management Router give IT reasonable assurance that the personal server is in the proper hands.

TalkPlus, known until last week as Caller IP, generated positive chatter with a service that promises to bring a passel of VoIP features to ordinary cell phones without the need for a broadband network and without traversing the Internet. Multiple phone numbers/identities, 10-way conferencing and inexpensive international rates are among the enticements. Although the company has yet to announce any deals with carriers, the service is expected to debut in January.

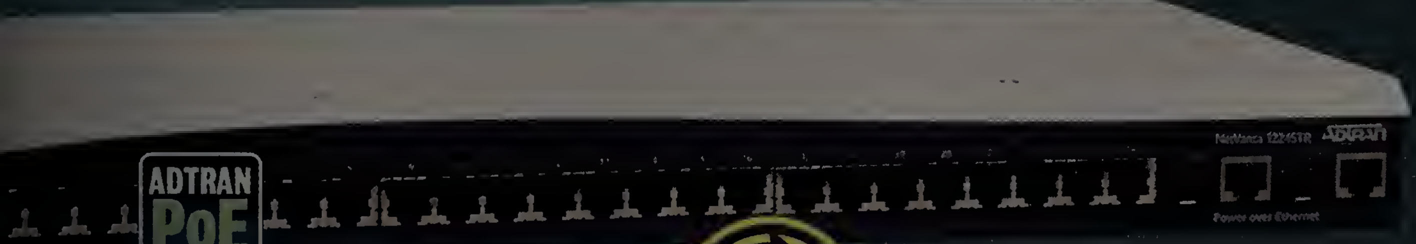
UniPrivacy showed off a promising partial answer for those, such as Google CEO Eric Schmidt, who find disturbing the notion that their personal information is piled up in so many places on the 'Net and easily accessible to all via search engines such as Google. UniPrivacy will monitor such repositories for you and request the deletion of stuff you don't want hanging out there. Trouble is that not all collectors of private information offer mechanisms for having yours deleted. And much private information resides in public records that by definition are available for public scrutiny. UniPrivacy offers you this limited protection for $3 a month.

Because I am the type of driver who could get lost in a car wash, this next one appealed to me on a personal level. Destinator Technologies showed how it's going to save me from pulling my hair out next time I'm hopelessly lost. Think GPS and verbal directions right over your smartphone or PDA. My family is going to thank these people.

Peerflix provides an online mechanism for trading physical goods and services —

**See Buzz, page 20**

# VoIP. Is your network ready?



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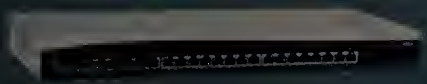

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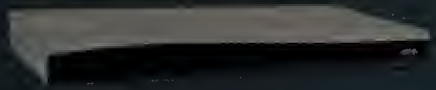

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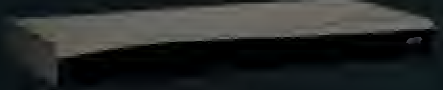

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